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The
RUBBER AGE

The Only Twice - a - Month Rubber Publication

VOL. XVII. APRIL 10, 1925 No. 1

VALUE OF RUBBER GOODS EXPORTED IN FEBRUARY DROPS TO $3,161,309

Smaller Exports Attributed to Effect of Seasonal Trend on Rubber Footwear and Short Month—Tires and Tubes Fall Off Slightly—Bathing Caps Exports Increase

In accordance with the usual seasonal trend, exports of waterproof rubber footwear fell off sharply during February, and influenced by this decline in addition to the fewer business days in February, the total value of rubber goods exports dropped to $3,161,309 as compared to $3,723,733 in January, and $3,027,840 in February, 1924. For the first two months of 1925, the value was $6,885,042 as compared to $5,737,129 in the first two months of 1924.

Tire Trade Holding Up

Over 105,000 automobile casings were exported in February as compared with 112,000 in January showing that the tire trade is holding up steadily. Exports of automobile inner tubes declined in about the same ratio from 93,000 in January to 88,000 in February; and solid tires from 8,326 to 7,992. The average unit value per casing in February was $11.58, per inner tube $1.98, and per solid tire $25.50, a decline as compared to January for casings and solid tires and an increase from $1.82 in the case of inner tubes. The chief markets for casings were Argentina 15,454, the United Kingdom 10,983, Uruguay 7,325, Brazil 5,259, Cuba 5,097, Australia 5,013, Straits Settlements 4,907, Philippine Islands 4,098, Mexico 4,035, and Belgium 3,482.

Rubber Footwear Declines

Exports of each class of rubber footwear declined sharply in February, the decline in waterproof footwear exports being in accordance with the usual seasonal trend at this time of the year. The period from February to May inclusive is usually a dull one in the export trade in waterproof footwear, since the principal European markets import chiefly during the latter half of the year. Exports of rubber boots declined from 138,000 pairs in January to 49,000 pairs in February; rubber shoes from 90,000 pairs to 44,000; and canvas rubber-soled shoes from 404,000 to 324,000, lower shipments to Argentina being mainly accountable for the decline in this item. The trade in rubber heels and soles was also slow; exports dropped from 280,000 pounds in January to 187,000 in February, chiefly owing to reduced shipments to Mexico.

The mechanical rubber goods trade in February was about equal to that in January, though exports of rubber packing were relatively low. This trade has been less active during the last four months than during any other period for the past year and a half, especially

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STUDEBAKER-WULFF TO BUILD AT SALT LAKE

The Studebaked-Wulff Rubber Co., with factories at Marion, Carey and Wadsworth, Ohio, is planning to build another factory in Salt Lake. The initial expenditure for the first unit is expected to be $500,000. The plant will employ about 200 men with a payroll of $25,000 a month. Construction of a one-story, daylight type building, with ground dimensions of 500 by 60 feet will start as soon as necessary arrangements can be completed.

M. W. McConnell, assistant to the general manager, is now in Salt Lake arranging for the building. He has offices at 1028 Continental Bldg. The Salt Lake factory will serve the territory west of the Missouri River to the Pacific Coast. The plant will have an initial capacity of 500 tires and 1,000 tubes a day. From 40 to 50 experienced operators will be transferred from other plants to serve as instructors.

To Redeem Goodyear Bonds

The Goodyear Tire & Rubber Co., through the sinking fund agent, Dillon, Read & Co., recently announced the redemption of $750,000. principal amount of First Mortgage Twenty-Year Eight Per Cent Sinking Fund Gold Bonds. Bonds are payable May 1, 1925, at the principal office of the Central Union Trust Company of New York or at the principal office of the Union Trust Company of Cleveland.

Stedman Offers Stock

Speaking before officers and sales department employees recently, James H. Stedman, president of the Stedman Products Co., South Braintree, Mass., manufacturers of reenforced rubber flooring, announced the inauguration of a plan of stock ownership for employees. It is anticipated that as soon as the plan is launched all employees will take stock. The plan was enthusiastically received by those who heard the announcement.

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DECLINE IN VALUE OF FEBRUARY SHIPMENTS

(Continued from Page 3)

the trade in rubber belting. The average value per pound of rubber belting exports in 1924 was about 59 cents; during February the average unit value was only 52 cents. The leading markets for belting in February were Canada 48,006 pounds, Chile 40,001, Mexico 23,156, the United Kingdom 22,618, Sweden 13,826, the Philippines 13,234, Japan 12,102, and British Guiana 11,684 pounds. Rubber hose went principally to the United Kingdom, Mexico, Canada, and British South Africa in February.

Over 16,500 water bottles and fountain syringes were exported in February, Argentina, Uruguay, Germany, Cuba, and Great Britain being the chief markets. The trade in bathing caps showed a considerable advance over January, 24,746 dozen being exported in February as compared with 15,477 dozen in January; most of these went to Canada, France, Sweden, the United Kingdom, Denmark and Switzerland; Norway, Spain and Egypt were also fairly important markets. The European trade is stocking up for the coming season.

The value of rubber toys, balls and balloons exported during February was $87,703, the United Kingdom being the largest market. The Netherlands market took $10,815 worth, Canada $6,978, Germany $7,777, Belgium $2,286, Australia $3,675, British South Africa $3,676, and Sweden, Mexico, Cuba, Argentina and British India over $1,000 worth each.

New Scrap Rubber Rates

Southwestern Freight Bureau Submittal No. 4115 proposes to establish rates on Scrap Rubber and Old Tires, minimum weight 50,000 lbs., from Texas points to Vicksburg, Miss., New Orleans, La., and points taking same rates on the same basis and minimum weight as is in effect on Scrap Iron. It is also proposed to establish transit privileges at Texas points to Vicksburg, Miss., New Orleans, rubber from the fabric, removing beads and for baling, such privilege to be subject to a charge of $6.30 per car. It is stated that these rates are in line with the contemplated rates to St. Louis and Memphis, and it is desired to maintain the existing relationship to New Orleans and Vicksburg.

Allen Factory Not Sold

The two-story factory building of the Allen Tire & Rubber Co. at Allen and Graham Sts., Allentown, Pa., which was to have been disposed of by the receivers at a public sale recently, was not sold because of the insufficiency of the bids. Bids up to $86,000 were submitted and prospective purchasers bid up to $2,725 for thirteen lots owned by the company. The sale was held by Henry D. Jordan and Harold W. Stimpson, ancillary receivers pursuant to a decree of Common Pleas Court. Another public sale will be held soon if the property is not sold privately.

THE CARBON BLACK MERGER

Statements already published in the daily press and in the trade papers on the proposed merger of a number of carbon black producing companies are unauthorized and in most cases grossly misleading and inaccurate, according to executives who are promoting the merger.

Such reports are based mostly on newspaper reports and should not be accepted as authentic by the rubber industry until such a time as they are given official sanction by the factors behind the merger.

Accordingly THE RUBBER AGE has refrained from publishing any unofficial statement on this subject lest it hinder the progress of the merger but our Editors have been in constant touch with the leaders of the consolidation for the past several months and our readers may rest assured that we shall publish an official, authorized and correct statement as soon as released. It is hoped to have this report in time for our April 25th issue for we believe that details of the merger will have been completed by the middle of April.

Asks Dismissal of Receiver

James W. Huston, who recently petitioned the Court of Common Pleas, Knox County, Ohio, for the appointment of a receiver for the Mt. Vernon Rubber Company, of Mt. Vernon, Ohio, on March 17, through his attorney, Ernest H. Huston, asked the Court for the dismissal of this action.

In asking for this dismissal the plaintiff upholds the directors in their conduct of the business and vindicates them as to policies and motives.

Sole Mold Patented

Claude L. Wilson, Johnson City, N. Y., has been granted U. S. Patent No. 1,530,025 on a mold for rubber soles. The mold consists of a holding plate, two parallel rails the top surfaces of which are broader than the bottom surfaces, longitudinally mounted on the plate surface, a plurality of molds having two parallel beveled longitudinal recesses in the bottom surface of the molds adapted to sidably engage the rails, openings spaced apart in the rails for removable spacing pins therein adjacent to the molds, and a handle removably mounted in the plate.

Fisk Assigned Tire Machine

Thomas P. Little, Chicopee Falls, Mass., inventor of a tire-building apparatus recently granted U. S. Patent No. 1,529,838, has assigned the patent to the Fisk Rubber Co., Chicopee Falls, Mass. The apparatus comprises relatively moving members adapted to receive an endless band of tire material, fluid pressure means to move the members to stretch the band, and a restricted passage between the apparatus and the source of pressure to retard the action of the device.

To Liquidate Hawkeye

A committee composed of Charles Maxwell, Carl K. Smith and John T. Christie, has assigned the property of the Hawkeye Tire & Rubber Co., Des Moines, Iowa, in order that liquidation may be made. According to Mr. Maxwell, the company's books show $750,000 paid out on a nearly completed factory. It is intimated that creditors will receive little or nothing as practically all the assets of the company are mortgaged.

Pharis Buys Equipment

According to Carl Pharis, general manager of the Pharis Tire & Rubber Co., Newark, Ohio, the company recently purchased and moved to their plant the calender, mills and other machinery of the former Rotary Tire & Rubber Co. of Zanesville, Ohio. Production will be increased to over 2,000 tires a day. The Pharis company has no factory branches or warehouses but sells their product through large distributors and dealers.

T-P Spring Tire Starts

Operations recently began at the factory of the T-P Spring Tire Co., 506 Commercial St., Atchison, Kansas. A solid tire with special features will be manufactured by this company, of which George Baudry is president.

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W. O. RUTHERFORD PREDICTS LARGE GAIN FOR UNITED STATES INDUSTRY

Bases Statement on Agricultural Situation, Better Foreign Outlook Due to Dawes' Plan and Political Position —Rubber Industry Must Share in Improvement

That American business and industry face a most encouraging year, in which fundamental conditions are favorable and with which elimination of waste in manufacturing and merchandising and scientific management must be associated, is the firm belief of W. O. Rutherford, one of the dominant figures in the rubber industry.

Mr. Rutherford is president of the Rubber Association of America and vice-president of the B. F. Goodrich Co., Akron, Ohio, in the interests of which corporation he is in Los Angeles on a nation-wide tour of conferences with district and branch managers and sales representatives.

"The nation's business has gone through an entirely new evolution since the period of depression in 1920," said Mr. Rutherford, "and out of the trying times have come better and more economical manufacture, management and merchandising, which in turn have given to the public more value per dollar and have put business on a more substantial foundation."

Based on Three Reasons

Mr. Rutherford bases his predictions on increase in business and commerce during 1925 on three authentic basic sources.

"The first is the agricultural situation. Few people realize how vastly the farmer's condition influences the swing of the business pendulum.

"The farmer is the greatest class buyer of manufactured products. His purchases represent 55 per cent of all classes. Being the largest buyer, as a class, it follows naturally that there never can be good times so long as he is unable to market his products profitably.

"In the last year we have seen the value of farm products reach a parity with manufactured products. The purchasing power of the farmer has increased three-quarters of a billion dollars. Once more the farmer is in a position to regain his position as the greatest class buyer.

"The agricultural situation, therefore, is an initial reason for business improvement this year.

"A second is the foreign situation. No nation in the world is so independent of foreign trade for its national existence and well being as the United States. Nevertheless, there is for our basic industries a very substantial place in the commerce of the world. This position we have strengthened through European acceptance of the Dawes' plan. This plan is essentially a commercial treaty. It provides for the extension of credit. It furnishes capital for trade and commerce. It is the means of putting a large part of Europe to work. What follows is stimulated trade. And in this, by virtue of our control of many basic materials, we must participate strongly.

"A third is political. Abroad, I look for little improvement. The solution and the establishment of friendly relations must come through economic and not political channels. Business knows no boundary lines and is the greatest allayer of national passions.

"At home we have voiced our preference, cast our vote and gone back to work.

"These favorable indexes, analyzed separately or collectively, assure a year of great business opportunity.

"And in this general improvement the rubber industry must share. On a sounder and more economic basis than ever before, with its affairs more scientifically charted, sharing in virtually every scientific development of the day, it is in a pre-eminent position to advance without burdensome handicaps."

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BISON SUPER-RECLAIM

The saving in cost is 16%. The saving in time of cure is 50%.

Let us show you how to safeguard your profits and the quality of your products in the face of an advancing crude rubber market.

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100 E. 42nd. St., N. Y. Factories: Buffalo, N. Y.

"42 *Years Serving the Industry Solely as Reclaimers.*"

ENGLISH AUTOMOBILE TRADE IS NOT DEAD, WRITES OUR CORRESPONDENT

Trade is Organized on Entirely Different Basis and Most Manufacturers Still Turn Out Hand-Made Cars with Mass Production in Its Infancy, Says A. C. Blackall

Distinct signs are said to be noticeable in England of a pronounced revival of the motor and allied industries. The auto industry in England is organized on fundamentally different lines to what it is in the United States, writes A. C. Blackall, British correspondent of THE RUBBER AGE in coming to the defense of Great Britain which was said to be at a standstill by William O'Neil, president of the General Tire & Rubber Co., Akron, upon his return from a trip to Europe. Mr. Blackall's complete letter follows:

To the Editor, THE RUBBER AGE:

In one of your recent issues[1] there appeared an interview with someone just back from Europe who said the automobile industry in this country was at a standstill. I can quite understand anyone fresh from America holding this view; I was under the same impression when I first came here.

But the impression is entirely erroneous. The auto industry is organized on fundamentally different lines here to what it is in the States. Most manufacturers still turn out "hand-made" cars. Mass production is still in its infancy, and prices in consequence comparatively high. The average man over here does not possess a car. According to Ramsay MacDonald, a man with a car is a capitalist.

Industry is Functioning

It takes a long time for a visitor to this country to understand that the industry really is functioning. He looks at production statistics and promptly considers it dead. Morris is the biggest manufacturer here and the one who has done most to develop mass production, yet he only turns out 60,000 machines per year. The average manufacturer here feels satisfied if he turns out only a small proportion of the number of cars a corresponding manufacturer in the States considers necessary.

The figures which I enclose[2] will show that the export trade is making good progress. I heard from Jack Bean recently. He is president of one of the biggest manufacturing concerns, and he says their export trade has increased enormously in the past few months. To Australia alone exports have increased by 150 per cent in three months. Considering that in 1923 Australia imported 85 per cent of her cars from other sources than the U. K., this does not seem an indication that the industry is standing still.

Ratio of Cars to Population

It would probably surprise you to know that there is a greater number of commercial motor vehicles in use here in proportion to the population than in any other country. Although I have no statistics to back me up, I believe the same is true of motorcycles. Where Britain falls behind is in privately-owned automobiles.

For all this, the industry here is a small one, whereas in America it is one of first magnitude. No reasonable standards of comparison can be used to adequately compare the two.

Sincerely yours,
A. C. BLACKALL

[1] *Page 256, Jan. 25, 1925.*

[2] The following statistics show the quantity and value of motors imported and exported by Great Britain during the years 1923 and 1924:

	1923 Quantity No.	1923 Value £	1924 Quantity No.	1924 Value £
Imports				
Motors-cars, etc.—Touring cars (incldg. cabs)	16,617	2,764,709	13,707	2,853,871
Commercial vehicles (incldg. motor omnibuses, motor fire-engines, & motor ambulances)	771	141,419	1,319	174,556
Chassis for touring cars (incldg. cabs	7,709	1,067,780	12,423	1,759,321
Chassis for commercial vehicles	4,928	661,267	—	—
		1923		1924
Parts of motor-cars (exclusive of chassis)		£2,084,590		£3,342,255
	1923 Quantity No.	1923 Value £	1924 Quantity No.	1924 Value £
Exports of U.K. Manufacturers.				
Motor-cars.—				
Touring cars (incldg. cabs).	3,259	1,210,564	10,961	2,897,493
Commercial vehicles (incldg. motor omnibuses, motor fire-engines, & motor ambulances)	977	663,162	1,730	787,561
Chassis for motor-cars	2,023	976,646	2,905	1,176,006
		1923		1924
Parts of motor-cars, etc., exclusive of chasis		£1,055,180		£1,652,506
	1923 Quantity No.	1923 Value £	1924 Quantity No.	1924 Value £
Exports, Foreign & Colonial Merchandise:				
Motor-cars.—				
Touring cars (incldg. cabs)	1,997	352,529	2,598	525,121
Commercial vehicles (incldg. motor omnibuses, motor fire-engines, & motor ambulances)	573	87,562	463	59,763
Chassi for motor-cars	149	39,873	369	77,255
		1923		1924
Parts of motor cars (exclusive of chassis)		£94,109		£384,418

Tire Method Patented

Melvon A. Marquette, Springfield, Mass., who recently received U. S. Patent No. 1,529,841 on a method of building tires, has assigned the patent to the Fisk Rubber Co., Chicopee Falls, Mass. The method includes forming one or more plies of rubberized fabric as an endless band of less size than that which it is to assume in the built-up carcass, placing the band about an expansible core while the latter is contracted, expanding the core to proper size, and stitching the fabric down upon the sides of the core.

THE VULCANIZED RUBBER CO.
Manufacturers of
HARD RUBBER GOODS
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RESULT GETTERS—
Thats what THE RUBBER AGE want 'ads' are! Try one when you need more equipment or want to dispose of old machinery.

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Entire freedom from bead trouble in the construction of straight side tires is assured by the use of either National "(Patent)" High Tensile Strength, Flat Woven, Bead Braid or our new (Pratt Patent) Bead Cables. These cables, made to dimensions specified, have seven strands, yet only one piece of wire is used without soldered, welded or brazed joint.

Write for working samples of either National flat braid or Pratt cables (no charge to tire manufacturers) and full information as to our products and service.

Our engineering department tests beads and furnishes complete confidential reports as to their stretch, set and bursting point, without charge. Inquiries solicited regarding this special service.

National Standard Company
Niles, Michigan

SUGGESTS CO-OPERATIVE AMERICAN PLANTATION

To the Editor, THE RUBBER AGE:

With the interest displayed by the United Fruit Co., of tropical fame, in the forthcoming "World's Rubber and Tropical Products Exposition," it has occurred to me, an organization of this high standing, having capital stock worth over $200,000,000. and not affiliated with any rubber company and therefore friendly to all in the U.S.A., that at last all American rubber manufacturers, might arrange for an American owned supply of crude rubber, at least in part by a co-operative plan.

As the proposed Rubber Exposition and Convention is to be held in Mechanics Building, Huntington Ave., Boston, (which so many greatly desire, as indicated by the huge petition asking the directors of the Rubber Association of America to co-operate with the Boston Chamber of Commerce to make the 100th Anniversary of the American Rubber Industry a most notable event,) one function would be to arrange for our future needs in crude rubber, a larger portion of which should be under American control, and not all in the same part of the world.

Proposes American Plantation

My tentative proposal is that all rubber manufacturers favoring the control of an emergency supply of crude rubber through American owned plantations, appoint such a corporation as the United Fruit Co. as a trustee and agent to acquire or develop rubber plantations on a "cost plus" basis.

I would also suggest that this trustee and agent be entitled to receive or collect from the co-operating rubber manufacturers, say 5 cents for each 100 pounds of crude rubber consumed, said money to be converted into shares of stock as the plan progresses, and that the resulting funds be used to acquire or develop American owned rubber plantations in several distinct parts of the world, especially in the Western Hemisphere if the concession for importing Chinese coolies can be obtained. Some estates could be in the East.

Rubber Division Could Help

In order to lighten the dues to the Rubber Association of America, (which might or might not be a party to the above plan for American owned rubber plantations,) why not turn over all the statistical work for the American Rubber Industry to the Department of Commerce, Rubber Division, and have it done gratis? Could anything be simpler, since this branch of the Government is already functioning in such a capacity?

The intense interest shown by the leading technical rubber men in the forthcoming first American managed Rubber Exposition, Boston, Oct. 10 to 17 (inclusive,) 1925, only goes to prove that the directors of the Rubber Association of America now have an unusual opportunity to make themselves very useful, by co-operating with the 54 petitioners from 11 states having a worth of nearly $300,000,000. The moral support of the Boston Chamber of Commerce is not included in the above sum, but with the largest membership in the U.S.A., the value of this support is colossal.

Yours truly,
Quincy Tucker

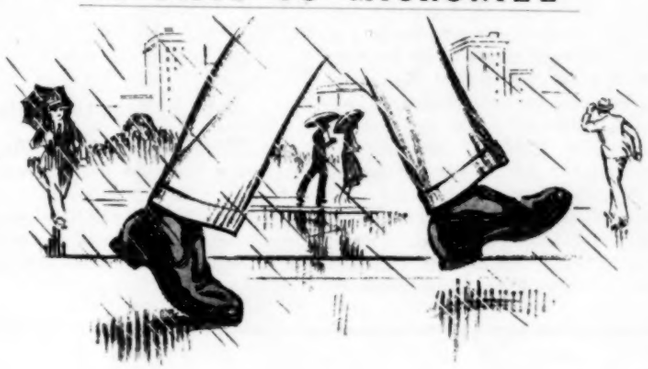
W. D. Coovert Quits Pioneer

W. D. Coovert, factory superintendent for the Pioneer Rubber Co., Willard, Ohio, resigned April 1 to enter business for himself. He expects to start the manufacture of rubber gloves in Somerset, Kentucky. Mr. Coovert designed a great deal of the labor saving machinery used in the Pioneer factory.

OFFER $600,000 BONDS OF RUBBER AND CELLULOID

The Rubber & Celluloid Products Co., Newark, N. J., through Taylor, Ewart & Co., recently offered an issue of $600,000 6½ serial gold mortgage notes to be dated April 1 and to mature serially. The company manufactures Rubberset brushes and miscellaneous rubber and celluloid products and has a Canadian subsidiary, the Rubberset Co., Ltd., at Toronto. Average annual earnings for the six-year period ended Dec. 31, 1924, were $181,105 or 4.64 times the maximum annual interest requirements of this issue. The notes begin to mature in 1926 and $60,000 matures each year until 1935.

IT PAYS TO MICRONIZE



Under the Varnish

IN the rush and scuffle of hurrying feet the tender film of varnish is soon destroyed—often exposing the greyish hue of the underlying vamp.

Not So—however—if to the compound there has been imparted the dense, jet, permanent black beauty of

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The King of Rubber Pigments

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TO HOLD FOREIGN TRADE CONVENTION JUNE 24-26

The call and preliminary program of the Twelfth National Foreign Trade Convention to be held at Seattle, Washington, June 24-25-26, which have just been issued by James A. Farrell, Chairman of the National Foreign Trade Council, reveal an advanced state of plans for what is to be the Council's first comprehensively international convention.

Delegations of business men have accepted the Council's invitation and will come to Seattle from Japan, China, India, Straits Settlements, the Dutch East Indies and the Philippines. They will take an important part in the group sessions on the practical phases of foreign trade, which will cover such vital matters as credits and credit information, selling methods, packing, shipping, documentation and finance, and advertising. As announced by the Council's headquarters in New York, group sessions will be held on American foreign trade problems in each one of these Eastern nations, and at each group session at least two of the speakers will be business men from the country under discussion.

Although stressing new American opportunities in Oriental trade, the Twelfth National Foreign Trade Convention will be as heretofore a forum for the discussion of the most general and the most vital interests which all Americans have in the $8,201,534,524 worth of foreign trade done in 1924. An annual American production of more than $70,000,000,000 stands behind this foreign trade, finding its own outlet and its exchange for world products a vital necessity of our economic system.

Harlan McDaniel

Harlan McDaniel, sales promotion editor of the Seiberling Rubber Company, Barberton, Ohio, was crushed to death Wednesday evening, March 10, when the automobile in which he was returning from Cleveland to Akron plunged over a cliff. It is believed that McDaniel was blinded by a heavy rain which was falling and drove his machine over the cliff.

McDaniel was well known in Akron and Cleveland, having been sports editor of the *Cleveland News-Leader* until December, 1918, when he entered the sales promotion department of the Goodyear Tire & Rubber Co. He also edited the *Goodyear Triangle*, the salesmen's publication. In 1922 he went with the Seiberling Rubber Co. He is survived by a widow and a young son, Richard.

A.I.C. Elects Fellows

Dr. Edgar F. Smith and Dr. Ira Remsen were recently elected honorary fellows in the American Institute of Chemists. The annual meeting of the organization was held on Monday evening, April 6, at the Emerson Hotel, Baltimore, Md.

AJAX RUBBER EARNED PROFIT OF $664,128

The Ajax Rubber Co., New York, recently reported gross sales of $16,516,715 for 1924, against $16,068,710 in 1923. After deducting operating expenses, the net earnings were $1,114,873, against $435,968 in 1923. Other income brought the total for the year to $1,284,286, against $552,885 in 1923. The net income for 1924 amounted to $664,128 after allowing for all charges, including reserves for depreciation and other accounts. This was equal to $1.56 a share on the 425,000 shares of capital stock outstanding. In 1923, after depreciation and other reserves, the company reported a deficit of $560,390.

The consolidated balance sheet is as follows:

BALANCE SHEET, DEC. 31, 1924

Assets	1924	1923
*Real estate, equipment, etc.	$ 4,129,871	$ 4,187,797
Goodwill and patents	1,874,875	1,874,875
Inventories	3,224,730	2,773,879
Notes and accounts received	2,746,693	2,981,743
Other assets	28,343	34,135
Investments	453,809	432,167
Cash	482,520	306,163
Deferred charges	336,505	359,074
Total	$13,277,346	$12,949,833
Liabilities		
†Capital stock and surp.	$ 9,171,387	$ 8,579,598
Mortgage bonds	2,534,600	2,696,200
Accounts payable	1,411,985	1,486,863
Accrued liabilities	159,374	187,172
Total	$13,277,346	$12,949,833

*After depreciation.
†Represented by 425,000 no par shares.

In the manufacture of white or pure red gum tubings it is not enough to merely compound crepe rubber with sufficient zinc oxide, sulphur and accelerator to produce a desired quality at a given price. The compounder must remember that hard, high-grade rubber and fillers when mixed with accelerators are liable to scorch on the mills and a suitable lubricant must be used to prevent this.

From—
"The Practical Side of the Use of Factice."

RUBBER FACTICE OF HIGHEST QUALITY
THE STAMFORD FACTICE
STAMFORD CONN
THE STAMFORD RUBBER SUPPLY CO

Est. 1900 Inc. 1919

THE KUHLKE MACHINE CO.
Formerly Jones & Kuhlke
AUTOMOBILE TIRE MOLDS and CORES
GENERAL MACHINE WORK
Akron, Ohio

PEQUANOC RUBBER COMPANY
Office and Works: BUTLER, N. J.
MANUFACTURERS OF
RECLAIMED RUBBER
WITH A REPUTATION FOR
UNIFORMITY – RELIABILITY – CLEANLINESS

PLANS MADE FOR AKRON'S CENTENNIAL CELEBRATION

F. A. Seiberling, president of the Seiberling Rubber Co., Barberton, announced recently that the entire budget of $60,000 for Akron's Centennial Celebration had been underwritten. A tentative program has been indorsed by Mayor D. C. Rybolt. It is planned to open the centennial on Sunday, July 19, with a special service in all churches. Four outdoor meetings will be held in the afternoon which will be featured by band concerts. The following day will be known as "Akron Day" and will be marked by a parade depicting the history of the city. A ball will be held that night.

School children, Boy Scouts and Girl Scouts will stage a pageant on Tuesday at Perkin's Woods. "Civic and Fraternal Day" will be observed Wednesday with a Mardi Gras celebration in the evening at Summit Beach Park. A fireworks display will be exhibited nightly from Buchtel Field.

Tire Apparatus Patented

The Fisk Rubber Co., Chicopee Falls, Mass., has been assigned U. S. Patent No. 1,529,843 on a tire building apparatus, the invention of Thomas Midgley, Hampden, Mass. The apparatus includes a core, opposed rung members recessed to conform to the core, with more clearance adjacent the bend than adjacent the tread, inflated bags in the recesses, and means to press the rings and bags against the core, whereby the bags are distorted towards the head portions of the core to smooth the cord tire building material laid thereon.

Kelly Provides for Notes

The Kelly-Springfield Tire Co., New York, has deposited with the Central Union Trust Co. of New York $550,000 to be used for the redemption on May 15 of $500,000 face amount of the 8 per cent sinking fund gold notes. The notes to be redeemed will be drawn by lot. The deposit was made over a month in advance of the date it was due.

Singapore Imports High

Dutch East Indian rubber imports into Singapore last year reached the high figure of 93,095 tons. Commencing with 7,672 tons in January, the monthly figures rose to 10,110 tons in December. The total imports into Singapore in 1924 amounted to 107,419 tons, and since last June there has been a steady and considerable increase in these imports. The Dutch Indies provided 86 per cent of them, of which only 12,289 was dry rubber, the wet rubber, which has to be treated in Singapore factories, amounting to 80,806 tons.

Apart from Dutch imports, British North Borneo and Sarawak sent 8,047 tons of dry rubber and 327 tons of wet. Other imports came from Indo-China, Siam and Burma, which countries between them accounted for 2,490 tons of dry and wet rubber, or 6 per cent of the total.

Singapore's total imports for January, 1925, were 10,131 tons, and the total exports 19,183 tons—over 4,000 tons less than the exports in January, 1924. All importing countries took less rubber from British Malaya in January this year with the exception of certain European continental countries. Of these Germany took 142 tons, France 75 tons, Italy 40 tons, and Belgium five tons from the F.M.S. direct. The value of British Malaya's exports this January was $25,856,000 (12,928,000 U. S.) and direct exports from F.M.S. ports were valued at $2,645,364 ($1,322,682).

SEIBERLING TO INCREASE PRODUCTION 40 PER CENT

Tire production at the Seiberling Rubber Co., Barberton, Ohio, will be increased 40 per cent shortly as the result of the installation of new machinery. The new program calls for 3,000 tires a day, compared with 2,200 at present. No definite plans have been made for reopening the plant at New Castle, Pa., which was shut down a year ago in order to concentrate production in Barberton. Rubber heel business is large and orders from manufacturers are increasing. Present production is about 5,000 heels a day.

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CHINESE PRODUCERS WANT STEVENSON PLAN REPEALED

(Special to THE RUBBER AGE*)*

A conference of the Associated Chinese Chambers of Commerce of British Malaya has decided to petition the Secretary of State for the Colonies, L. S. M. S. Amery, for the repeal of the law enforcing the Stevenson restriction scheme. Whether or not it succeeds in its efforts its action clearly shows that, despite the improvement which has been wrought in the industry, there are still many people in Malaya who believe that restriction, having already done what it was claimed to be able to do, can only prove detrimental to the industry if persisted in. The contention of this section of producers is that restriction, apart from being an artificial method of price control, is primarily designed to save estates which cannot save themselves in the field of fair competition. They also hold that in following this policy the interests of small native owners are entirely ignored.

Certainly the Chinese are not unanimous in their views. One section contends that restriction operates harshly and inequitably and is now beneficial only to the Dutch; another section, lead by the nominated members of the Legislative and Federal Councils of Malaya, avers that restriction has saved the industry and must not be abandoned. The latter section intends to counter petition Secretary Amery for the continuance of restriction. An effort is also being made to organize an Asiatic Rubber Producers' Association of Malaya to officially voice the views of oriental producers.

Granted Rubber Patent

Philip Schidrowitz and Mervyn S. Stutchbury, London, Eng., have been granted U. S. Patent No. 1,530,164 on the manufacture of rubber. The process for the production of a dry vulcanized rubber having special plastic properties and endowed with the natural qualities inherent in unmilled vulcanized rubber consists in obtaining substanitally all the solid constituents from a colloidal suspension or emulsion of vulcanized rubber in an aqueous medium by finely comminuting said suspension into a gaseous drying medium.

Goodrich Registers Boots

The B. F. Goodrich Co., Akron, Ohio, recently registered in the U. S. Patent Office under Ser. No. 207,810 the trademark "Litentuf" which it has been using on rubber boots since Sept. 1, 1923.

FORD PLANTS RUBBER

Henry Ford has planted two acres of his Florida ranch near LaBelle with rubber seeds of various kinds. In addition he has many small trees growing in his rubber nursery. Ford's experiment is being watched with interest by rubber men all over the country as its success will mean a great step toward the independence of the United States for its supply of crude rubber.

Scrap Rubber Men Meet

A meeting of the Scrap Rubber Division of the National Association of Waste Material Dealers was recently held at the Hotel Astor, New York. There was some discussion about changes made by the Rubber Reclaimers Division of the Rubber Association and it was voted to ask the Rubber Association for a conference. Edward Friedlander was elected chairman of the Scrap Rubber Division for the fiscal year ending March 24, 1926. The Division voted to co-operate with other divisions in the working out of a uniform contract.

New R. & H. Solvents

The Roessler & Hasslacher Chemical Co., 709 Sixth Ave., New York, recently announced that they are now producing Tri-Clorethylene and Tetra-Clorethane. The manufacture of these two new solvents is an entirely new development in this country, although the company has been importing them for several years. The value of these solvents in the rubber industry has been definitely established, as they possess the inestimable advantage of being non-inflammable.

Vulcanizing Method Patented

Franklin G. Neal, Springfield, Mass., inventor of a method of vulcanizing tire casings recently granted U. S. Patent No. 1,530,000, has assigned the patent to the Fisk Rubber Co., Chicopee Falls, Mass. The method consists in enclosing the article in a rigid mold partially vulcanizing the article while it is forced in to the mold by an internal expanding pressure and further vulcanizing at a reduced pressure.

Wellston Rubber Elects

At the recent annual meeting of the Wellston Rubber Co., Wellston, Ohio, the following officers were re-elected: Norman Shelton, president; Ross Gettles, vice-president; and E. L. Ervin, secretary-treasurer.

LITCHFIELD OPTIMISTIC ON GOOD 1925 BUSINESS

Continuation of present business prosperity, rapid increase in the use of motor buses by transportation companies, and complete changing over from high pressure passenger tires to low pressure tires in a very short time, were some of the predictions made by P. W. Litchfield, vice-president of the Goodyear Tire & Rubber Co., in a talk to 1,600 Goodyear employees at Goodyear theater recently.

"This looks like a good year all the way through for business throughout the country," Mr. Litchfield declared. "The farming industry is in better condition than it has been for four or five years and the countries in Europe are getting into better shape and purchasing more raw materials.

"Last year Goodyear had difficulty manufacturing enough tires to keep up with the demand," Mr. Litchfield said. "Our salesmen sold 50 per cent more tires last year to dealers than in the year before. One of the reasons for this was the quality of the product which Goodyear employees are making.

"The day of the high pressure tire for passenger cars is over and before long the whole tire output for this kind of cars will be balloon type tires. The change will be permanent.

"Traction companies are extending their lines with motor buses because they are more elastic than street cars," he said. "As a result the production of large pneumatic tires will be on the increase."

In regard to wages, Mr. Litchfield stated that while the trend in lumber, mining and textile industries was downward, he believed that it would continue on the present level in the rubber industry.

"The same policy will be continued toward baseball this summer as was taken toward basketball," he said.

"There are only half as many tire companies in direct competition now as two years ago," Mr. Litchfield declared. "No tire company in the country is as strong financially as Goodyear."

Tube Process Patented

Edward H. Loftin, Washington, D. C., was recently granted U. S. Patent No. 1,530,128 on a process of and apparatus for making rubber tubes with tapered ends. The apparatus consists of a mandrel over which a tube may be placed and a constrictive ring having inherent constrictive pressure for engaging the tube member. The ring bears upon the tube with a graduated pressure in different zones.

INTERNATIONAL PULP CO., *41 Park Row, New York, N. Y.*

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COURT OF ACHIEVEMENT PLANNED FOR CHEMICALS

Chemical products, equipment and processes, in fact, all new developments of American chemistry of the past few years, will each receive unusual recognition at the Tenth Exposition of Chemical Industries to be held this year during the week of September 28th to October 3rd at the Grand Central Palace, New York. Plans for the new "Court of Chemical Achievement," inaugurated at the recent meeting of the Advisory Committee of the Exposition, are rapidly taking shape. Outstanding achievements of American chemistry, whether in the research or industrial field, which have been completed during recent years, will be admitted to the Court after they have passed a committee of approval of the American Chemical Society.

The new "Court of Achievement" which bids fair to be the outstanding feature of the Chemical Exposition this year, will be in the form of small unit exhibits together in one large specially arranged group. Among the new products which have been suggested to be displayed and explained by members of the American Chemical Society, who will oversee the exhibits, are 27 recent developments. This list will probably be increased several times by other new chemical products, instruments, and explanations of new processes.

All exhibits will be passed upon and admission to the "Court of Achievement" granted by a committee of the American Chemical Society known as the Committee of Approval, which is composed of Marston T. Bogert, chairman, C. M. Stine, E. R. Weildlein, F. W. Willard and John Johnston. A subcommittee of the Chemical Exposition Advisory Committee composed of H. E. Howe, chairman, F. J. Metzer, and T. B. Wagner, will act in an advisory capacity to the exposition management in the general conduct of the new project.

Entries for new products and processes for the Court of Achievement must be sent to Court of Achievement, Room 1102, Grand Central Palace, New York, prior to May 1st, after which time applications will not be considered. A nominal fee will be charged for all exhibits in the Court except those of institutions of learning and Government bureaus or departments which will be accepted without charge if they pass the judges. A brochure will be printed and distributed from the Court of Achievement at the Exposition. Full information can be secured by inquiring at the address indicated above.

Tire Core Patented

Victor H. Hurt, Fort Madison, Iowa, was recently granted U. S. Patent No. 1,529,654 on a tire core comprising a plurality of arc-shaped core sections, a ring engaging the sections and headed studs fixed in the ring and sections. The heads of the studs in the ring engage the heads of the studs on the sections and lock the sections to the ring.

BRITISH DUNLOP MAY SHOW GOOD PROFITS

Optimistic rumors are current in London that the annual report of the Dunlop Rubber Co., will show profits of at least £2,000,000 ($10,000,000). One reliable market estimate is that the concern is now selling 3,000,000 tires per year at a profit of £1 ($5) per tire, apart from its big golf ball trade. It takes £675,000 ($3,375,000) to pay prior charges, so that probably about 20 per cent is now being earned on the ordinary capital. A large dividend, however, is not looked for, as the directors' policy is to consolidate the financial position.

Mohawk Starts Addition

Work has been started on a new addition to the plant of the Mohawk Rubber Co., Akron, according to S. S. Miller, vice president and factory manager, who also states that 1300 cord tires are being manufactured daily against a total production of 800 tires daily last year at this time.

The cost of the new addition will approximate $75,000. More space will be provided for the production of tires, which is expected to mean a still greater increase in production.

Increases Capital

The Electric Hose & Rubber Co., Wilmington, Del.,, recently increased its capital from $100,000 to $2,000,000.

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RUBBER PLANTS REPORT INCREASED WORK HOURS

Continued improvement in industrial conditions generally at a conservative pace is indicated by the monthly report of the National Industrial Conference Board for January on wages, hours, and employment, while a tendency toward increase in the purchasing value of the dollar is indicated by the Conference Board's report on the cost of living, showing a decrease of one and one tenth per cent between January 15 and February 15.

Improved Conditions

Factors making for improved industrial conditions in January were increased employment, increased working hours and an increase in the average weekly earnings of all workers. A net increase in employment of slightly more than 2% occurred from December to January, gains being reported by 17 industries, while 8 showed decrease, somewhat in line with seasonal requirements. The average work week per wage earner increased from 47.9 to 48.7 hours. Average weekly earnings of all workers rose from $26.85 in December to $27.09 in January, slightly surpassing the level of January a year ago, when the average weekly earnings stood at $27.05.

Even the situation of the workers in the northern cotton mills, whose wages had been subject to reductions, were better off in January owing to increased working hours, raising their average weekly earnings from $20.32 to $20.61.

With his weekly earnings in January, the worker could buy the same in goods and services as he could during the preceding month, the index number of "real" weekly earnings computed by the Conference Board remaining unchanged at 129 during that month. This despite a slight advance in cost of living from December to January, which was offset by the increase in weekly earnings.

Hourly Earnings Decline

Average hourly earnings of all wage earners declined slightly, from 56.1 to 55.9 during the month, but coincidence of this with increased employment leads the Conference Board to the conclusion that the hourly average in wages was lowered by the putting on of additional workers at lower rates of pay.

The more pronounced gains in employment occurred in the following industries: agricultural implements, automobiles, cotton (in the North), silk and foundries. Industries showing the greatest increase in working hours were the boot and shoe, cotton (northern), leather tanning, rubber, silk and foundry industries.

Increased weekly earnings were reported in the boot and shoe, hosiery and knit goods, iron and steel, leather tanning, wool and foundry industries.

Dayton Holds Sales Meeting

Forty New England distributors were among those who attended a recent sales convention of the Dayton Rubber Mfg. Co., Dayton, Ohio, held at the Copley-Plaza, Boston. C. F. Buttrick, Boston branch manager, presided at the meeting, and three of the officials A. L. Freedlander, vice-president and factory manager: G. W. Spahr, general sales manager; and E. B. Self, advertising manager, attended. The meeting was followed by a banquet.

Foote Bros. Elects

At the annual stockholders' meeting of the Foote Bros. Gear & Machine Co., Chicago, the directors of the preceding year were unanimously re-elected as follows: J. T. Kerwin, W. C. Davis, A. W. Foote, Thomas J. Harper, Leo J. Doyle, Ralph M. Shaw and E. J. Robinson. The directors elected the following officers: W. C. Davis, president; J. T. Kerwin, vice-president and treasurer, and A. W. Foote, secretary.

India Erects Large Sign

The largest spectacular electric sign in St. Louis, advertising tires, has just been put in operation by The India Tire & Rubber Co., Akron, Ohio, advertising their connection with the Glenn Tire Co., their factory distributors in St. Louis. Only one sign of any kind in St. Louis has as many lights as the India sign.

The sign is located on the Glenn Tire Co. building which is at Grand and Pine and shows to three boulevards. The sign is 12 ft. high and 35 ft. wide. The copy on the sign is "Glenn Sells India Tires," set in three lines. The letters in "India Tires" are 38 inches high and 8 inches wide, and are equipped with one hundred sixty-five 25-watt nitrogen lamps. The words "Glenn Sells" are made on trough metal equipped with 10-watt lamps. An arrow 60 feet long, running to either side of the sign from the bottom to the top, contains ninety 10-watt lamps with colored hoods. Eighty feet of border is equipped with one hundred fourteen 10-watt lamps. Five 150-watt reflector flood lights at the top of the sign complete the illumination. There are 452 lamps in the sign.

CEYLON INDUSTRY SHOWS SMALL DECLINE FOR 1924

(Special to THE RUBBER AGE*)*

From the producer's viewpoint 1924 was not such a prosperous year for the Ceylon rubber industry as its predecessor. The average price realized was lower, being 76 cents (about 25 cents U.S.) against 89 cents (about 29 cents) the previous year. The exportable maximum allowed was also less, but a cheering feature was the increased consumption, which, coupled with the effects of restriction, caused a heavy depletion in stocks held in Britain.

The offerings at public auctions averaged over 300 tons weekly during the year, and considerable business was transacted privately. Total shipments amounted to 83,666,532 lbs., against 83,130,606 lbs. in 1923. America was again the largest customer, taking nearly 70 per cent of the shipments. Continental Europe took two million pounds more than in 1923, but the exports to the United Kingdom were 2½ million pounds less, being lower than has been recorded for years.

Latex shipments materially increased - 59,333 gallons compared with 11,431 for 1923. These shipments took place in November and December, with the result that the Government has brought latex under the restriction ordinance as from January 1. The exchange was a further factor against the producer. It ruled on the average about two cents (U.S) above the rate ruling in 1923.

At present prices a fair return is shown from Ceylon rubber investments, and the position generally is reviewed with optimism.

The following table is taken from the annual report of the Colombo Brokers' Association:-

Other destinations included:- Australia, 343,460 lbs in 1924, 164,822 in 1923, 1,328,464 in 1922, and 323,030 in 1921; Japan, 279,061 lbs., 374,680, 212,869, and 326,129; and all other ports, 138,472 lbs., 99,729, 8,945, and 9,548 respectively. The total distribution was 83,666,532 lbs. in 1924, 83,130,606 in 1923, 106,102,392 in 1922, and 90,071,102 in 1921.

Lee Outlook Bright

Officials of the Lee Tire & Rubber Co., New York, say that the outlook for a good year is brighter than at any time since the company unified its two subsidiaries, the Lee Tire & Rubber Co. and the Republic Rubber Co. Operations for January show a profit.

GUAYULE RUBBER
"DURO" Brand Washed and Dried Ready for Compounding
A comparatively small percentage in a compound will make a stock run smoother on calendars and tubing machines, without depreciating the quality
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Our representatives are prepared to place before you practical evidence of the value of the "watch case" Vulcanizer.

It is the kind of evidence Production Executives desire when new equipment or manufacturing economies are under consideration.

It will be presented by practical men whose experience in building successful rubber manufacturing equipment covers many years: men who deal in facts.

You will find this evidence very interesting. It is offered without any obligation.

Lower Initial Cost

Lower Operating Expense

Reduced Labor Cost

Reduced Maintenance Cost

The Akron Standard Mold Co.

Akron "The Established Measure of Value" Ohio

Singapore Firm Fails

In the latest report received from Symington & Sinclair, the London rubber brokers, it is stated that the Singapore market has been severely disturbed by the failure of a Chinese dealer concern, whose suspension of payment has just been made known. The concern in question was a very large one and has several allied companies. The total liabilities are said to amount to approximately £100,000 (about $500,000). "Bear" sales of 3,000 to 4,000 tons are said to be uncovered, of which at least half is engaged for near delivery in the East and the balance for export.

Golf Ball Core Patented

Walter W. Evans, Benton Dales, Walter H. Juve and Emmet H. Junkins, all of Akron, Ohio, inventors of a golf ball core and a method for making it, recently granted U. S. Patent No. 1,530,820, have assigned the patent to the B. F. Goodrich Co., Akron. The core comprises an envelope containing powdered metallic lead distributed throughout a liquid of such high viscosity as to maintain the lead in colloidal suspension.

Standard Tire at Capacity

The Standard Tire Co., Willoughby, Ohio, is now operating its factory night and day with a payroll of over 100 amounting to $20,000 a month. Sales of the company aggregated over $1,000,000 last year.

INOFRMATION EXCHANGE

The inquiries listed below have already been answered but additional information from our readers will be welcome. Mention the reference number in correspondence.

Uncured Friction

(Reference No. 141) Can you furnish us a list of manufacturers of uncured friction from whom we may purchase in carloads lots?

• • •

Can Manufacturers

(Reference No. 142) Will you please refer me to a number of can manufacturers from whom I might buy cans to market a rubber patch outfit?

• • •

Trimming Machine

(Reference No. 143) We are in the market for a machine by means of which rubber pieces, as they come from the molds, are trimmed so that they have a clean appearance. Could you put us in touch with the manufacturers of such machines?

• • •

Soft Molded Specialties

(Reference No. 144) We are desirous of having a small rubber article manufactured and would appreciate a list of manufacturers of soft rubber molded specialties.

Dunlop Gets Tire Patent

Wallis Henry Paull, Birmingham, England, inventor of a pneumatic tire recently granted U. S. Patent No. 1,530,574, has assigned the patent to the Dunlop Tire & Rubber Corp. of America, Buffalo, N. Y. The tire consists of a textile component and a rubber component with the middle portion of the textile component disposed within the corresponding portion of the rubber component eccentrically to the inner surface of the tire.

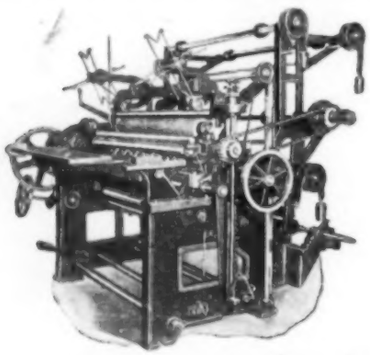
Connors Back from Trip

General Manager Connors of the Republic Rubber Co., of Youngstown, returned from a four-weeks' trip through the south, establishing new distributing connections. He predicts that the time will come when Republic will establish a waiting list of customers for its mechanical goods products.

Rubber Dealers Incorporate

Haldane-Bierrie & Co., Inc., New York City, has been chartered with a capital of 1,000 shares of preferred stock of $100 par value and 500 shares of common stock of no par value to deal in rubber goods. Incorporators are B. W. Smith, O. E. Holmes and D. J. Hilberg, 165 Broadway. Chadbourne, Hunt and Jaeckel, 165 Broadway are the attorneys for the new company.

CAMACHINE 6-C



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For Artificial Leather, Oil Cloth, Carriage and Automobile Covers
DRYING MACHINES
with Copper or tinned iron Cylinders for Cotton Ducks, Drills and Sheetings

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OFFICE, No. 83 EXCHANGE PLACE
PROVIDENCE, R. I.

D. A. Grubb Joins Star

D. A. Grubb, one of the foremost figures in the tire industry today, has associated himself with The Star Rubber Co., Inc., Akron, Ohio, as vice-president in charge of sales. Mr. Grubb has been elected a director, having acquired a substantial interest in the Star Rubber Co.

D. A. Grubb

Mr. Grubb is known from coast to coast as the result of his recent close contact with the commercial field. During the last two years, he has devoted his attention chiefly to truck and bus conditions. He is recognized today as an authority upon practically every phase of this subject.

Mr. Grubb's work has kept him in constant touch with truck and bus tire design and production as well as sales and distribution. It will be his policy to organize all Star activities with a view to specializing in this field. Mr. Grubb believes that the truck and bus tire industry is only in its infancy and that the possibilities are almost unlimited.

He was formerly secretary and sales manager of the India Tire & Rubber Co., of which organization he was one of the founders eight years ago.

F. H. Wessell Moves

F. H. Wessell, manufacturers representative, recently removed to 404 United Building, Akron, Ohio. The new telephone is Main 6346.

W. H. Hackett Promoted

At the last annual meeting of the stockholders of The Miller Rubber Co. held recently in the company's offices at Akron, Ohio, W. H. Hackett was elected assistant secretary and assistant treasurer of the company. Mr. Hackett came to The Miller Rubber Co. from the Akron High Schools in June, 1923 and entered the accounting department in a junior capacity. He rose from assistant paymaster, to paymaster and then to cashier. In his new capacity as assistant secretary and assistant treasurer he will report to the general manager, William F. Pfeiffer, who is secretary and treasurer of the company.

W. A. Hackett

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Buy the Burrs with
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MICA
NON-METALLIC WATER GROUND
Highest Grade for Rubber Industries
Pure—finely powdered—For use in tread stocks, repairing tires, in air bags, inner tubes and various kinds of molded mechanical goods.
Desirable as it is a Toughener and Heat Resister
THE HARSHAW FULLER & GOODWIN CO.
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SALES AGENTS
for
RICHMOND MICA CORPORATION
RICHMOND, VA.
Stocks Carried at
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CARTER BELL STANDARD SINCE 1898 RUBBER SUBSTITUTES
150 Nassau Street New York

I.R.I. HOLDS THIRD BANQUET IN LONDON

(Special to THE RUBBER AGE*)*

All branches of the rubber industry were well represented at the third annual dinner of the Institution of the Rubber Industry of Great Britain, held recently at the Hotel Victoria, London.

Sir Stanley Bois, who presided, referred in his speech to the broadness of the Institution's constitution. Its object, he said was to promote a better understanding and closer relationship between all sides of the rubber industry. The Rubber Shareholders' Association is now going to join in the lot of the Institution, and this ensures an addition of no fewer than 2,541 members.

"We all desire a greater consumption of rubber," continued Sir Stanley, "for we are in position to supply the world with more rubber than it wants. This is largely due to the scientific and technical work done in relation to automobile tires. We supply 70 per cent of the world's requirements, but it is necessary that we should expect an increased manufacture in Great Britain. The popularization of the automobile must in the main come through the private car. There are, perhaps, more rubber-tired buses on the streets than we can do with, but the roads of England are wonderful and there is room for many more cars. All rubber societies and those concerned with automobiles might combine themselves together in some sort of organization with a view to popularizing and extending motoring, which would, of course, lead to the greater consumption of rubber.

D. F. L. Zorn, chairman, Council of I.R.I., warmly approved the joining of the Rubber Shareholders' Association. The Institution, he said, was bringing the light of modern knowledge to all concerned. The spirit of cooperation and mutual help needed to be openly acknowledged and nursed. In this respect he thought Prime Minister Baldwin had done a great public service.

Lieut.-Colonel Hacking, secretary, Society Motor Manufacturers and Traders, suggested that the future development of rubber in relation to automotive vehicles would depend largely on the development of road traffic than on the increase of private cars.

Members of the Hicks Rubber Co. who visited Akron

Visit Diamond Factory

Sixteen members of the Hicks Rubber Co., San Antonio, Texas, wholesale distributors for the Diamond Rubber Co., recently visited the Diamond factory at Akron, Ohio, where they devoted a week to the study of manufacturing methods. The visit was arranged to give the men a better knowledge of the products they sell.

H. MUEHLSTEIN & COMPANY, Inc.

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FOR THE RUBBER TRADE

"TIRE" BRAND SUPERFINE Rubber Sulphur
"TUBE" BRAND VELVET Rubber Sulphur

Specify "Tire" and "Tube" Brands on your orders. This will assure you of Stauffer quality and service.

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The largest individual producer of distilled pine products

E. G. WILMER TO HEAD NEW DODGE BROS. CO.

E. G. Wilmer, chairman of the Goodyear Tire & Rubber Co., Akron, will head the reincorporated Dodge Bros., Inc., which was recently purchased by a banking syndicate headed by Dillon, Read & Co. at a price reported between $105,000,000 and $150,000,000. It is said that the company will eventually take over several other companies, including the Packard Motor Car Co., the Briggs Body Corp., and possibly the Goodyear Tire & Rubber Co.

Correcting an Impression

Some of our readers might have got the impression from an item published on Page 368 of our March 10 issue regarding the new R. & H. Stress Strain Recorder that C. S. Williams, a technologist in the rubber service laboratories of that company, was connected with The Rubber Service Laboratories Co., Akron, Ohio. Mr. Williams has no connection with The Rubber Service Laboratories Co. which was incorporated in 1921 and has been engaged in the manufacture of accelerators. The plant of the company is located at Nitro, W. Va.

Southern Zinc Stocks

It was recently announced by the New Jersey Zinc Co., New York, that stocks of its zinc oxide and lithopone will henceforth be carried by the Southeastern Compress & Warehouse Co. at At'anta and Richmond.

TIRE PRICE INCREASE EXPECTED

According to rather well founded reports circulating in the rubber industry, an increase in tire and tube prices of 15 to 20% may be expected within the next month. It is well known that since the release of the annual statements of the larger rubber companies, the opinion has prevailed that only a material price increase would allow of proper profits on invested capital.

Several of the smaller companies are said to have already announced higher prices to dealers and it undoubtedly will not be long before a general increase is announced. Present high prices of crude rubber will necessitate an upward adjustment on the part of the smaller tire manufacturers and the larger companies are not adverse to greater revenues at this time. May 1 and May 15 are spoken of as the dates of probable increases.

To Do Business in New York

The Racine Rubber Co., Racine, Wis., has filed a certificate in the office of the Secretary of State of New York to allow it to do business in that state. Capital of New York branch is $5,000 and offices are located at 220 W. 57th St., New York City.

ROCK ISLAND RUBBER ACQUIRES PLANT SITE

The Rock Island Rubber Co., Rock Island, Ill., has purchased a lot opposite its present factory, 1609 Third Ave. The lot is 26 x 150 feet. A one story factory building will be erected in the near future, it has been announced by A. G. Negro, who controls the Rock Island company. The company, which manufactures tires, was established eight years ago.

Attending A.C.S. Meeting

Among Akron rubber chemists who are attending the annual meeting of the American Chemical Society at Baltimore are Dr. W. C. Geer, Dr. H. L. Fisher, Dr. H. L. Trumbull, C. W. Bedford, W. W. Evans, Harold Gray, H. A. Winkleman and W. M. Jones of the B. F. Goodrich Co.; Dr. H. A. Morton and H. R. Thiess of the Miller Rubber Co.; Dr. L. B. Sebrell, Dr. W. J. Kelley, R. E. Dinsmore, C. R. Park and W. W. Vogt of the Goodyear Tire & Rubber Co.

Installing Mixer

Work is well under way on the concrete foundation for the new rubber mixing machine being installed at the Monoblock Rubber Co. plant, by the contractor, at New Philadelphia, Ohio, who also has the contract to build a lean-to addition to the plant to house the mixer. The dimensions of the addition will be 20 x 30 feet.

The Road Grind

The ultimate success of a rubber tire depends largely on its ability to withstand abrasion. The tire manufacturer must rely chiefly on gas carbon black to develop this quality.

aerfloted
ARROW BLACK

will develop as high as 25% additional resistance over ordinary standards. Production under precise control insures uniformity in every shipment.

MAIN OFFICE:
130 West 42nd Street
New York

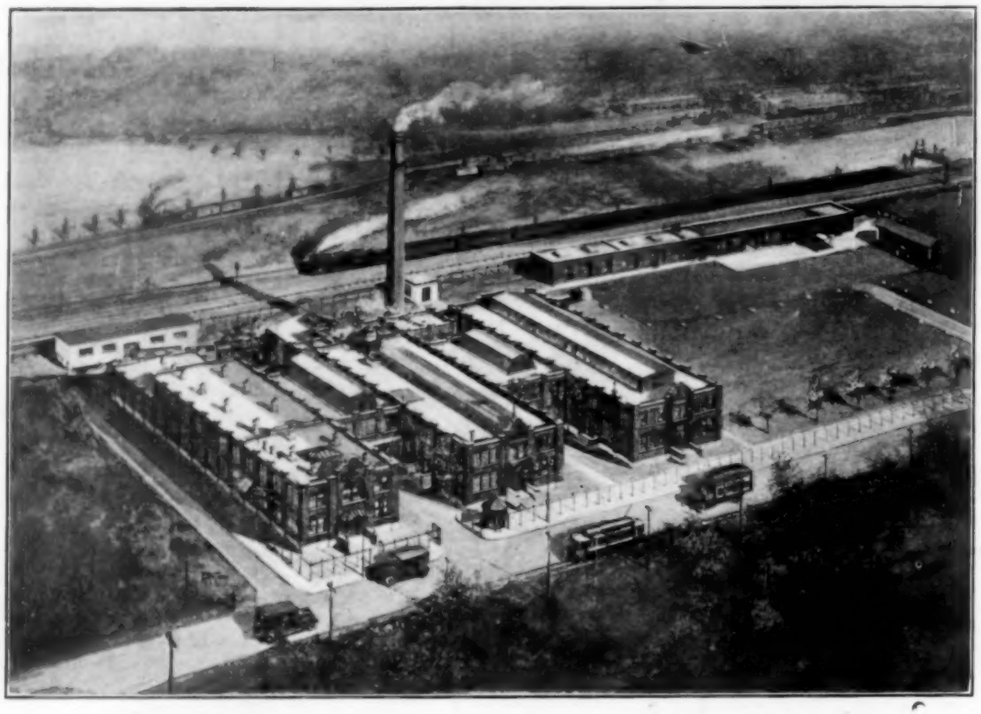
J. M. HUBER, Inc.
Manufacturers

FACTORIES:
Swartz, La. *and*
Breckenridge, Texas

Stocks carried at: Baltimore, Boston, Chicago, Cincinnati, Cleveland, St. Louis, Los Angeles, New York, Philadelphia, Toronto, Canada; London, England; Paris, France; Hamburg, Germany

RECEIVER'S SALE

By Order of the United States District Court, District of New Jersey



ENTIRE PLANT EQUIPMENT AND REAL ESTATE OF

BERGOUGNAN RUBBER CORP.

TRENTON, NEW JERSEY

THURSDAY, APRIL 30, 1925 AT 2 P.M.

On the Premises—Present Replacement Value $760,000

Property comprises nearly 9-1/2 acres and is situated in the northerly zone of Trenton, N. J. on main line of Pennsylvania R.R. Has railroad spur running into premises at rear of factory buildings.

Buildings of brick construction, in excellent condition, most of which have been erected in last 5 years. Cover approximately 4-1/2 acres, with 5 additional acres of level ground for further building purposes.

Entire plant completely equipped and ready for immediate operation. Present production capacity 1000 pneumatic tires daily and with additional vulcanizing machinery, can be doubled.

Must be sold at Auction to the Highest Bidder on April 30, 1925 in accordance with order of United States District Court.

PLANT IS EASILY ADAPTABLE FOR ANY OTHER MANUFACTURING PURPOSE

REAL ESTATE AND POWER PLANT WILL BE SOLD WITH OR WITHOUT MACHINERY

Inspection of premises any day between 8 A.M. and 5 P.M, Descriptive folder and further particulars can be obtained from

BILDER & BILDER
Attorneys for Receiver
Kinney Bldg., Newark, N. J.

CHARLES E. STOKES, Receiver
Bergougnan Rubber Corporation
Trenton, N. J.

Maintaining Interest in Safety

Ways of Making the Factors Operative Which Have the Greatest Effect in Reducing all Industrial Accidents

By **Carl B. Auel**

President, National Safety Council

THE subject of this article involves the very crux of the whole industrial safety problem. It is not overstating matters to say that "a plant" can be made as safe as the management and the workers want it to be"; but, if such desire is not in evidence and it is not possible to maintain interest in the work of safety, there can be practically no headway made beyond the first few steps. These steps may be said to embrace simply the mechanical or equivalent guarding of tools and equipment and, of course, may be taken in a more or less perfunctory manner; but, it has been estimated, they will not effect a reduction of more than 25 to 35 per cent in the accidents which are likely to occur in an unguarded plant.

The question, therefore, may be pertinently asked before going further, "Whose interest is meant in the title of this article: employer, employees or both?"

Employer Must be Sold on Idea

There has been considerable said and written to the effect that no safety work of any consequence can be carried on in a plant unless the employer has been sold on the idea first. Such statements are true, but have become thread-bare with constant repetition and the public at large is led to believe that employers are men differing from ordinary human beings, men whose sense of feeling for their fellow men has become deadened and who can only be awakened to a renewed sense of the fitness of things with respect to safety, health, sanitation, working hours and many other items, by legislation.

There will undoubtedly be found an employer, now and again, who measures down to such specifications; but the experience of the writer over a number of years in close contact with large employers (and his experience is duplicated by the experience of many others) has shown that they are usually far in advance of the general public in matters affecting the welfare of their employees, including their safety, and not from a selfish viewpoint, but from every conceivable one—humanitarian, economic, etc. If, at times, there is an apparent lack of headway being made in the solution of some problem connected with employees' welfare, it is not so much due to indifference on the part of the employer, as it is to a lack of knowledge of the way in which to proceed to its successful accomplishment. Further, they are only human and, accordingly, cannot follow every one of the innumerable matters connected with an industry down to its minutest details; but must, perforce, delegate certain individuals as their representatives, clothing them with the neccesary authority to act. These representatives should be looked upon as the management in their respective fields and the absence of the actual head of a concern, from a safety meeting or other gathering, should not be considered as indicating a lack of interest on his part, but rather because there is a limit to even a superman's capacity and endurance.

In answering the question, therefore, it may be taken for granted that the present-day employer, especially if connected with big business, is usually interested by virtue of his position. But as one goes down the line in managerial authority, clear down to the "underboss," the evidence is not so convincing, so that even if the actual employer's interest does not require stimulation, at least his representatives in the management of the plant are to be included along with the rank and file of employees, whose interest must be maintained.

There are, however, a number of preliminary steps to be taken before any plant management should expect to meet with even a reasonable measure of success in maintaining interest in safety.

The writer once set down what he thought to be the ten items which would have the greatest effect in reducing accidents in industry and lists them herewith, not necessarily in the order of their importance:

Minimum labor turn-over.
Health and contentment.
Good lighting.
Cleanliness and neatness.
A measured pace (includes suitably studied wage system, absence of rush at noon and quitting hours and clean-up periods, elimination of driving methods.)
Prohibition.
Education.
Intelligence, skill and carefulness.
Mechanical and equivalent guards.
English language.

These indicate the complexity of the problem originally thought to be such a simple one. Each factor entering in must receive its full share of attention. It would be folly to expect that in any plant in which the opposites of the preceding items were rampant, interest in safety or in anything else could be maintained for any appreciable length of time; in other words, the management should not feel that its plant can become, as it were, a melting pot for every conceivable kind of employee—good, bad and indifferent—either as to health, workmanship, citizenship, sobriety, intelligence, carefulness, education, habits and so on, and expect by any scheme thus far known, to mold all of them into safe, sane and desirable workers. There must be discrimination and care shown in their selection. Furthermore, the proper requisites for safety cannot in all fairness be expected to come wholly from the workers. The management should provide its quota of desirable qualities, both in the treatment and in the facilities accorded the employees, for industrial contentment will play its part in solving the accident problem.

The Safety Engineer

A safety engineer (be he called by this or any other title) must be a broad-gauge man, preferably one of experience, who can, among other accomplishments, analyze the situation by means of charts, data, etc., with respect to accidents in the plant from time to time and who can further place his conclusions and recommendations before the management with the certainty that they will receive attention. He should moreover be a man who has the qualities of leadership and who can put the problem of safety into non-technical language for the benefit of the foremen and the rank and file and secure their continuing interest.

Such a man should not only be permitted but expected and encouraged to visit other plants, attend safety meetings, etc., in an effort to keep abreast of the times as well as to give others the benefit of his own experience.

Safety work in a plant is, however, not a one-man job, though it may take only one man to organize it and keep it going. Accordingly, every plant should be organized on a suitable safety basis. While it is not the intention to describe any of the several more prominent forms of safety organizations in use, it is advisable to point out that any organization to be effective must include some of the more intelligent workers among its number, as they can usually be relied upon to transmit the desires of the management to the other workers in language and ways that can best be understood by them; they will also transmit to the management points of

view and secure help from the other employees which could not perhaps be so readily obtained in any other manner.

No matter how well organized for safety work a plant may be, unless properly provided with a program requiring active effort, little will be accomplished.

For a starting point, data should be obtained as to what others have done in accident prevention work, although it is my own feeling that no plant can properly be compared with any other plant, since there are always certain differences between them which should be, but which are not taken into account. In any event, such data will at least provide a mark at which to shoot and will furnish the safety organization with information to pass along to the shop.

Accident drives are also excellent as re-enforcing the data obtained from other concerns and as showing more accurately possibilities in accident reduction in one's own plant. The period of a month is, in general, too long for a drive and it is better to have either two to four drives of one week each or one or two drives of two weeks each. The idea in this is that greater effort will be made over the shorter period, or if one department is not successful in the first attempt, it has a chance to retrieve in the second attempt, without being down and out for the entire period of thirty days. Departments having "clean-sweep" (no accident) records can properly be given some visible trophy like a broom which will proclaim their accomplishments, and, it the broom can be arranged to record subsequent "clean-sweep" performances, its effectiveness is not only increased in the department itself, but its effect on other departments in spurring them on to increased effort to match is self-evident.

Data to be Classified

Other essential data to be accumulated should be the number of accidents and their classification, the accident severity and the accident frequency rates month by month throughout the year, for, of course, a progress report must be kept for reference purposes. Whenever safety meetings are held, some or all of this data will be needed to compare present performance with past, the kinds of accidents occurring and where, so that attention may be directed to the places needing assistance.

A word should be said regarding accident frequency and severity rates. As adopted by the International Association of Industrial Accidents Boards and Commissions, those may be expressed by the following formulae:

$$\text{Frequency} = \frac{\text{No. of accidents}}{\text{Total hours worked}} \times 1{,}000{,}000$$

or

Accidents per 1,000,000 hours worked.

$$\text{Severity} = \frac{\text{Total days lost}}{\text{Total hours worked}} \times 1{,}000$$

or

Days lost per 1,000 hours worked.

These formulae should be used in making comparisons with other concerns; but the average workman does not grasp the significance of these figures and further, the figures are rather small at best, so in our own plant, we have found it preferrable to use instead:

Accident frequency = Total hours worked per accident.

Accident severity = Hours lost per accident.

Every department is provided with a chart containing this and other data which is conspicuously posted where all employees can see the progress, or the reverse, that is being made. These charts thus form part of our educational work among the employees as well as serving our safety men and committees.

Bulletins are undoubtedly the chief medium of education in most plants and can be secured from any of several sources in most attractive shape. They may be supplemented by others from one's own experience and these latter, if consisting of brief statements without illustrations, can be printed at very low cost. To be thoroughly effective, bulletins should be posted on bulletin boards of good design, favorably located and kept in serviceable condition, both as to repair and as to reading matter; that is to say, bulletins should be posted and removed regularly, though when removed from one department they may again be posted in another; furthermore, such bulletins need not always be confined to safety subjects, but may be varied judiciously.

There can be no greater evidence that the management of a plant is in earnest in dealing with safety than to have all tools and equipment properly guarded and if this has not been done, the effort to put safety across with the employees will fail. In a large plant, even these steps involve a tremendous amount of work, but notwithstanding this handicap, it can be partly offset by having an inventory taken of all tools and equipment from the viewpoint of safety, placing those involving serious hazards in the "immediate attention" class and leaving the others to be given attention in due course.

This inventory may need to be retaken in whole or part at certain intervals if rearrangement of any department of the plant is made later.

The Suggestion System

A suitable suggestion system will be found of material aid in this guarding of a plant. Not only will suggestions be made covering hazards either overlooked in the inventory or which have developed subsequently but further improvements will be offered for guards already installed which will often prove well worth while. A suggestive system, to be really effective, needs an incentive which will keep the interest of the employees from dying out. One system with which the writer is acquainted, accomplishes this by offering in addition to the award paid for the suggestion itself a further award consisting of $10 for the first five accepted suggestions; $5 for the second five accepted and so on.

Some plants have found, either as a substitute for or in addition to their safety committee, a "safety patrol" to be of wonderful assistance in safety work. Briefly, a body of men is formed among the workers in a plant, one or more being selected from each department and instructed to patrol their respective departments and observe the employees to see that they are handling themselves and their equipment properly; for example, to see that they are not wearing gloves where such would involve a hazard, not using imperfect tools, not chipping toward an aisle, wearing goggles when necessary, seeing whether or not guards are in place, whether or not there are tripping hazards, etc. If there is a likelihood of an employee taking amiss any word of caution, the patrol is instructed to call the attention of the foreman to the party in question and have him make the necessary correction. These patrols are not usually limited as to time to be spent on such safety work, the matter being left to their own judgment as to whether or not it should be one or two hours a day or once or twice each week. For the time so spent away from their regular occupations, they are paid their average earned hourly rates. These men, being carefully selected, are, as a rule, changed only for some special reason.

Safety Meetings

Safety meetings should be held at intervals, just who should participate and how frequent the intervals depending on conditions. An occasional big meeting or rally attended by everyone connected with a plant is quite in order, as is a no-accident drive, but it is not so much the spectacular as the day-in-day-out effort that counts. The writer is, therefore, an advocate of fairly frequent meetings, say from one to three months apart, of departmental heads (superintendents, assistant superintendents) of individual departments (superintendents, foremen, bosses, etc.) and of safety patrols where these are organized.

In any courses of instruction for the supervisory forces one or more talks should be devoted to safety. In one works where such courses exist, the subject has been handled very successfully by means of a questionnaire. A list of elementary questions on safety has been prepared by the safety department, which centers mainly around the employee from the time he first enters the plant until the time when he is thoroughly well acquainted. There are also certain questions touching on the workmen's compensation laws and a comparison of accident losses with other wastes in the plant. The instructors who conduct these classes were provided originally with at least one answer to each question so that

they would not be stumped for a suitable reply to each of their own questions; and, since the questions have actually been used, additional replies, as received from the men, have been incorporated as well.

Generally speaking, at safety meetings matters immediately concerning safety in the plant itself should form the subjects of discussion, and "home" talent can always be found to provide the ammunition necessary to make such meetings interesting. Review may be made of the accidents which have actually occurred in a department since the last meeting, the scene of an accident may be visited and recommendations made with a view to the prevention of any reoccurrence. Talks by the plant doctor may be given on first aid, prone pressure method of resuscitation, eyes and the dangers of infection. Speakers from other plants can also be obtained, more particularly if the program at any time is to be formal. However, the informal heart-to-heart kinds are preferable.

Attending N.S.C. Meetings

Many employees have little or no idea of the way industrial safety has taken hold in this country and are inclined to look upon any effort in their own plant to make conditions safe as silly or effeminate. If, therefore, from among the employees a few leaders can be selected and sent to attend occasional meetings outside of their own plant, including the annual congress of the National Safety Council or the schools conducted by councils throughout the country, and if on their return, they are selected to speak at some of the safety meetings in their own plant, the expense involved will be found to have been a well made investment in safety.

An inspection of a plant from the viewpoint of cleanliness and neatness should be made at regular intervals by a well-mixed committee of staff and workers, reports of the findings being sent direct to the superintendent or works manager, as the case may be, and signed preferably by the entire committee.

The writer believes as fully in plant inspection for the prevention of accidents as in the inspection of raw material coming into a plant or for finished material shipped out. To this end, there has been instituted in the works, with which he is connected, a regular system of inspection of a considerable number of small items involving accident hazards, some of which are not so obvious as are those of large items—cranes, elevators and the like. The following table gives the items thus far included:

Accident Hazards

Items	Interval between inspections
Electrical shop hazards	6 mos.
Hand trucks	6 mos.
Ladders—portable and stationary	6 mos.
Window cleaners' belts and window eyes	6 mos.
Stretcher cabinets	12 mos.
First-Aid cabinets	Weekly
Crane operators (physical exam.)	12 mos.
Food handlers (physical exam.)	6 mos.
Hand tools (mushroom heads, broken and missing handles, etc.)	6 mos.
Tools and equipment (mechanical guarding)—In case of rearrangement of department or plant.	
Crane chains and hooks	Constantly
Cranes	Constantly
Elevators	Constantly
Gas masks	12 mos.
Emery wheels (guards and water supply)	6 mos.
Hydraulic elevator tanks	12 mos.
Bulletin boards	As bulletins are posted
Goggles—sterilizing outfits	6 mos.
Warning signs	12 mos.
Safety meetings	1 to 3 mos.
Stair treads and railings	3 mos.

Accidents are, as we all know, not confined to the industries, for the entire nation is permeated with carelessness and thoughtlessness, the germs which give rise to most of them, and such being the case, careless, or thoughtless workers will bring their habits with them into any plant, and unfortunately employers can not throw safety mantles about their employees during working hours. Further, when a glance at the employment records of many plants show a labor turn-over considerably in excess of 100 per cent, the problem is additionally complicated, as an employee who is constantly moving from one plant to another is rather difficult to teach.

In closing, however, employers should bear in mind:

1. That safety work ought to be entered into not only with the object of getting results in their own plants but also
2. Of lending assistance in the solution of the problem as a whole.

The first can be accomplished, in part at least, by installing safety methods of which a few of the more prominent have been sketched briefly; the second, by participating actively in the safety movement outside of one's own plant, as instanced by joining the National Safety Council and other organizations. In such participation will the greater success be met with in the attainment of the first objective.

Reports That Report

An Outline of the Need and Preparation of Reports from the Departments of a Large Concern

Some executive's desks are cluttered, their files choked with useless departmental reports. And yet well-organized monthly departmental reports are constantly saving managers and presidents hours of labor and energy and thousands of dollars. Unless they are of real service and emphasize outstanding facts of value to the management they are a waste of time, money, and energy.

Investigation by the Business Research Bureau of LaSalle Extension University indicates that little or no constructive business building information can be gathered from many departmental reports because department heads make the mistake of thinking that a mass of detailed facts and figures are necessary in a report made to an executive. As a matter of fact, the executive is interested more in a summary of detailed data or in the conclusion arrived at after the mass of detail has been analyzed, than he is in the details themselves.

The executive is primarily interested in results and in the effect of certain factors upon his business. He is more interested in the results than he is in the factors themselves. Definite methods will bring out clearly the factors desired.

One essential of every report to an executive is brevity—not brevity for the sake of briefness, but brevity for the sake of clearness. Let the sentences be short; let the figures be grouped clearly. Make every word count; be sure the important figures are not dwarfed by detail items. Short paragraphs are easier to read than long ones and much more effective. Where figures are an important part, line them up so the eye follows them easily and arrange them so that those in which the executive is most vitally interested will stand out as if they had a pennant flying over them.

Graphic presentation of facts often affords the executive a quick and thoro understanding of the principles and facts covered by the report. For that reason tabulation, charts, and graphs should be used to emphasize any information that can be graphically presented. This is especially the case when indicating the gradual development of a given operation or related results, such as cost figures, production reports, or sales records. Graphs and figures are helpful to executives because the eye is brought into play and quickly "senses" danger signals or recognizes favorable indications. This is explained by the fact that most executives are "eye-minded".

The ideal report starts out with a brief statement of the subject under consideration, followed by a summary of findings and conclusions. By glancing over the first few paragraphs the executive forms an immediate impression of the operations of that particular department for the period in question. If the conclusions arrived at in the report show up all vital factors involved there is no need for the executive to wade through the mass of detailed facts, figures and statements from which these conclusions were drawn. In comparing one departmental report with another the executive may find it necessary to refer to the detail data upon which the reports were drawn. For that reason summaries or conclusions should always be supported by the facts on which they are based. These facts should be supported by specific evidence and actual figures as drawn from the records of the departments.

Papers to Be Read at the A.C.S. Meeting

BELOW are given complete abstracts of all the papers to be presented before the Division of Rubber Chemistry of the American Chemical Society at the 69th meeting of the society in Baltimore, April 6 to 11.

Relation between Adsorption Power of Clays and Their Behavior in Rubber Compounds

H. R. Thies

Clays of the same chemical type do not behave similarly when compounded in rubber stock; one type gives good cures and tensile strengths; the other slow cures and inferior tensile strengths. These two types of clay adsorb different amounts of dye from solution, the clay which is good for rubber usage, adsorbs the smaller amount of dye. Adsorption of different types of dye does not appear to follow the chemical relationship of molecular weights. The difference in clays is exhibited with various accelerators and relationship between cure and amount of dye adsorbed in a standard method of measure is shown. The difference in clay behavior is very little in unaccelerated stocks. If the adsorbing power of clay is saturated, it behaves in a normal manner.

The Absorption of Water by Rubber

J. T. Blake

A vulcanized rubber compound if soaked in water may absorb as much as 500 per cent water. The water vitally affects its electrical properties. The absorption is inherent in the rubber and is not produced by the compounding ingredients. The various factors involved in the absorption have been studied. The effect of many latex coagulants on the rubber produced has been ascertained. The absorption is caused by the nonrubber constituents present in the rubber. Removal of these constituents in the preparation of pure rubber, gives a product which does not absorb water.

The Effect of Humidity in Rubber Testing

R. B. Springfield

The humidity of the air to which a rubber stock is exposed either before or after cure has a decided effect upon the physical properties. High humidity before cure raises the modulus of the cured stock with some accelerators and lowers it with others. High humidity after cure lowers the modulus with all stocks. The effect is entirely a physical one, vulcanization coefficients showing no change. (Preliminary report)

Comparative Tests on Sodium Fluo Silicate—Coagulated Rubber

C. R. Park

A study has been made of the comparative quality of rubbers coagulated with acetic acid and sodium fluo silicate. Sodium fluo silicate retards the rate of cure in all mixes tried except those accelerated with litharge where the rate of cure is about the same. The original quality of the SF rubber at equivalent cures is somewhat lower on the average than that of the AA rubber. Natural and artificial aging tests indicate that SF rubber is somewhat poorer in quality than AA rubber.

Studies in Physical Properties of Rubber. II. A Micro Examinaton of Latex and the Structure of Rubber by the Use of the Kineo-Photomicrograph

L. B. Sebrell, C. R. Park, and S. M. Martin, Jr.

A micrographic study has been made of latex and the mechanism of its coagulation. New evidence has been obtained relative to the shape of the latex particles, and their persistence after coagulation. The results have been recorded in motion pictures and in photomicrographs. The work of Hauser has been verified. The relation of these results to the probable structure of rubber as outlined in a previous communication has been pointed out.

The Effect of Milling on Rubber Stocks

Ellwood B. Spear and Robert L. Moore

1. Long cold milling does not give so good pure gum stocks as short cold milling. 2. Long hot milling does not deteriorate pure gum stocks so much as long cold milling. 3. The best pure gum stocks, other things being equal, are made by short hot milling. 4. The tensiles and elongations of heavily compounded carbon black stocks are greatly improved by hot milling while the pigments are being incorporated into the rubber. 5. The increased tensiles and elongations are probably due to a better distribution of the carbon black. Microscopic observations on this point are given in another article to be published shortly entitled 'The Distribution of Carbon Black in Rubber Stocks.'

The Distribution of Carbon Black in Rubber Stocks

Ellwood B. Spear and Robert L. Moore

Stocks prepared by milling 20 per cent by weight of high grade carbon black into pale crepe at a temperature of approximately 105 deg. C. have a high tensile and a high elongation. Microscopic sections of these stocks, sufficiently thin to allow transmitted light to pass through at 1500-2000 diameters magnification, show the carbon black to be extremely well distributed. Very few particles and no aggregates of carbon black can be seen. The color of such sections depends upon the thickness and varies from yellow to reddish brown. These colors, the undertone of the carbon, are due to the fact that most of the carbon black exists in the colloidal state in the stock. Lampblack stocks treated similarly show none of these colors because the undertone of lampblack is blue. A method is described in detail by which very thin sections of rubber stocks may be made. A very excellent microtome was made by using a microscope and a sectioning razor.

The Ultra-Violet Microscope in the Study of Vulcanized Rubber Latex Globules

Henry Green

In this paper use is made of the fact that unvulcanized rubber allows the transmission of wave length 0.275m., while vulcanized rubber absorbs it. This gives us a new method of attack for studying the distribution of the sulphur after it has combined with the latex globule.

The Electrodeposition of Rubber

S. E. Sheppard and L. W. Eberlin

Rubber particles in natural latex (ammoniated) and in artificial rubber dispersions in water are negatively charged. In an electric field they move to the anode. This effect has been used previously to electrically coagulate raw rubber. It has now been found possible to admix with latex or rubber-in-water dispersions sulphur, pigments, and accelerators, and to electrically deposit *rubber compounds, integrally,* upon both metals and other materials to form coherent, homogeneous layers of considerable range of thickness. These deposits can be vulcanized according to any desired cure and vulcanization factor. The process can also be used to impregnate fabrics. The coatings can be deposited either in an adherent or non-adherent form, and be vulcanized on the support or independently. The character of the coating on metals is found to depend upon the (anode) over-potential for oxygen, control of which is therefore important. The process can be applied to the continuous coating of sheet, wire and fabrics.

Effect of Accelerators on Cure and Quality of Various Rubbers

A. O. Zimmerman and R. P. Dinsmore

Data are given to show the correlation of the figures for cure and quality between different accelerators in the same type of mixing, and with a number of different rubbers. It is found that the variation on the whole is not great; that where a variation exists there is no apparent correlation between the behavior of different accelerators, or with any of these and a straight sulphur mix. Variability due to cure is greater than that due to quality. Variation in mixings with some accelerators appears to be higher than with others. An experimental procedure is outlined and a quality index figure developed, which is shown to be more reliable for a limited number of tests than tensile or tensile-product. A brief dis-

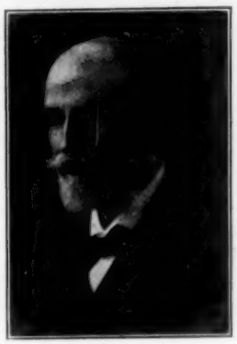
(Continued on Page 25)

VULCANIZATION & ACCELERATORS

By Andre Dubosc

PART II (*CONTINUED*)

Natural and Mineral Accelerators



Vulcanization of Rubber that has been Deprived of Resinous Matters and Proteins is Impossible—Experiments of Stevens and Beadle to Learn the Action of Metallic Oxides on Vulcanization

It is now very easy to understand the role played by the litharge in the vulcanization of rubber. The part played by magnesia when it is added to the rubber mixture and vulcanized is of the same order, but for reasons of a purely theormochemical character, its effect on the vulcanization of the rubber is less rapid and moreover less energetic.

The following gives some idea of the thermal balances that may be calculated for the reactions that take place between magnesin, litharge and zinc oxide with polymeric sulphur.

$$16\ PbO + 3\ S_8 = 16\ PbS + 8\ SO_2$$
$$51 + 16 = 17.8 \times 16 + 69.2 \times 8$$

816 calories is less than (280 plus 633) or 918 calories.

$$16\ MgO + 3\ S_8 = 16\ MgS + 8\ SO_2$$
$$149 \times 16 = 79.6 \times 16 + 69.2 \times 8$$

2284 calories is greater than (1273 + 633) or 1906 calories.

$$16\ ZnO + 3\ S_8 = 16\ ZnS + 8\ SO_2$$
$$86.4 \times 16 = 43 \times 16 + 69.2 \times 8$$

1382 calories is greater than (688 + 633) or 1321 calories.

Explanation of Thermal Equations

In the case of litharge, the thermal equation is positive, and the reaction takes place at a very low temperature, in fact even in the cold.

In the case of magnesia and oxide of zinc, the thermal equation is negative. The reactions can be produced only under the influence of high temperatures which are proportional to the specific heats of the metallic oxides and of the rubber.

The influence that litharge exerts on the reactions responsible for the vulcanization of rubber is therefore very evident from this explanation. It is also evident that any metallic oxide which possesses a low heat of formation possesses the power of giving rise to a sulphide with a high heat of formation and will react in the same manner as litharge. The study of the thermo-chemical phenomena that take place during the vulcanization of rubber, a study which does not seem to have been given the consideration and attention it deserves, has many surprises for the investigator, and will undoubtedly be able to explain many facts and phenomena which have remained in an obscure condition up to the present time.

The first investigations that were carried out by Lothar Weber, Stevens, Beadle and others established a certain number of important points, which since they were first discussed by these experimenters have remained in obscurity.

Early Facts not Appreciated

These investigators in particular described and explained the important roles played by the resinous matters and the proteins contained in the virgin rubber. They indicated the importance of these substances in the vulcanization of the rubber gum, and showed their influence on the physical constants of the vulcanized rubber. They also found and evolved the fact of the quasi-impossibility of the combination of sulphur with a rubber gum which had been deprived of these ingredients and which was therefore absolutely pure rubber. Finally they determined the effect the presence of metallic oxides, such as litharge, has on the complex reactions which constitute the vulcanization process. A new chapter in the science of the vulcanization of rubber was thereby opened up and the first, original statements that were made by these investigators have now come to assume a significance which was entirely unforeseen, an importance which was not expected, not only from the scientific standpoint but also from the industrial viewpoint.

Vulcanization Impossible with Pure Gum

In the case of a rubber gum which has been deprived of all its impurities, it has been found that vulcanization is impossible. The question then arises what will happen when the percentage of impurities in the gum is increased? What will happen when the percentage of substances which are capable of reacting energetically is increased in the rubber mixture? Will these same substances also possess the power of rendering the combination of sulphur with rubber more rapid? Will these substances have the effect of allowing this combination to take place at a lower temperature, or within a shorter period of time? Will the addition of these substances give a number which will be possessed of all the good physical properties of the gum when vulcanized under ordinary conditions, or in fact will the physical constants of the vulcanized rubber be enhanced?

Have the first fundamental bases of that stupendous problem, which has since been called the acceleration of the vulcanization of rubber and of the vitalization of the same, been established?

Action of Metallic Oxides

Stevens, either in collaboration with Beadle, or alone, carried out an entire series of experiments, as much with the intention of determining the action of metallic oxides on the vulcanizing process, as with viewpoint of finding out what happens to the course of the vulcanizing operation when resins and proteins are added to the rubber batch. These researches had particular reference to the role that is played by litharge in the vulcanization of rubber.

"Rubber," say Stevens and Beadle in their memoirs, "is always found associated with resinous materials which are found in the latex. However the form under which these materials are encountered is almost unknown to us. The globules which are found in the rubber latex may be formed of rubber alone, rubber mixed with different resinous substances or of these resinous substances alone.

"If the globules possess different compositions, it is possible to identify and classify them through microscopic examination, for their indices of refraction differ. We subjected

rubber latex to an examination under the microscope, great care being taken in the experiment, but we have never been able to observe any difference in the globules found in latex coming from the secondary plant tissue. In the case of rubber latex which was derived from the primary plant tissue, particularly in the case of Hevea latices, we have found that the proportion of globules of normal appearance was small. The proportion of resinous materials, although much higher than that in ordinary latex, was not however high enough to justify the small percentage of normal globules.

"The major part of these abnormal globules formed one third part of the volume of the ordinary globules and possessed an index of refraction which was less than the normal index of refraction.

"We then instituted a series of investigations on this interesting point."

Structure of Globules

"It is known that rubber possesses the property of dissolving in ether. If globules of resinous materials are present in the rubber latex in a condition which makes it possible to isolate them from the rubber globules, i.e., if the rubber globules and the resinous globules are separate from one another, it should be possible to extract the rubber globules by a simple extraction with ether. For the resinous materials are more soluble in ether than rubber itself.

"We separated rubber latex into three fractions of solid products. These fractions were obtained in this manner and were subjected to extraction in the Soxhlet apparatus with acetone to determine the amount of resinous matters contained in each. Thus it was found that the content of resinous matter was as follows: 2.56 per cent, 2.44 per cent and 2.16 per cent.

"We expected to find a greater difference between the proportions of resinous materials contained in these fractions and in the extracts of the globules. The result obtained in this experiment was interesting but it was not conclusive.

Variation of Resins

The proportions in which rubber and resinous matters are found in rubber gums vary within very wide limits. For example, it is possible to cite the case of djeulatong, the extract from dyera latex. The solid materials in this latex do not contain any more than ten per cent of rubber, and the remainder is made up of non saponifiable resins.

"Rubbers of good quality, as for example those that are derived from the Ficus elastica and Castilloa, contain five per cent rubber in the first case and ten per cent rubber in the second, depending on the age of the trees.

"Finally well prepared Hevea rubber only contains from one to three and one half per cent of resinous matters according to an acetone extraction. There are sometimes found rubbers of this type which will contain a higher percentage of resinous matters, but this is due to the absorption of these substances by the rubber, during the smoking process. The matter absorbed in this manner comprises certain constituents that are soluble in the smoke. The percentage of resinous materials usually found in sheet and in crepe rubber varies in the neighborhood of two and one half per cent.

"The lowest figures are obtained by separation of the constituents in water from the acetone extraction and by subtracting the figure that is obtained in this fashion from the figure for the globular matter in the acetone extract. This proportion is very variable.

Direct Extraction with Water

"As a matter of fact the acetone does not extract all the products that are soluble in water, and if a direct extraction of rubber is made with the aid of water, the weight of the aqueous extract that is obtained in this manner is greater than that obtained by making an aqueous extract of the acetone extract. If the rubber that has been extracted with water is subjected to further extraction with acetone, an entirely new extract will be obtained.

When crepe rubbers are extracted directly with water, they give from four to five per cent of extract, the paler colored sheet rubbers more than this figure and the smoked sheets from one to one and a half per cent.

Tabulation I.

Quality	I Matter in rubber gum soluble in water	II Matter in rubber gum soluble in acetone	III Water soluble matter in acetone extract	IV Soluble matter in gum after acetone extraction
1. Crepe, pale	0.44	3.18	0.60	0.90
2. Smoked sheet, a.	1.40	3.84	0.56	0.90
3. Smoked sheet, b.	1.24	3.64	0.82	0.44
4. Pale smoked sheet	0.68	3.92	1.50	0.44

All the figures in the above tabulation are based on an original dry rubber. The figures which are found in column three of that tabulation show the part of the substance that is obtained by acetone extraction that is soluble in water. In other words these figures show what portion of the acetone soluble matter, as seen from column two in the tabulation, is soluble in water.

The results that are given in the above tabulation are very interesting. When a study is made of the figures that are given for sample number 1, pale crepe rubber, it is curious to note that the total percentage of the ingredients of the rubber gum that are soluble in water, as seen from the figures in the third and fourth columns, that is 0.60 plus 0.90, or 1.5 per cent, is a figure which is much greater than the percentage of soluble matter as obtained by a direct extraction of the rubber gum with the aid of water. This percentage is seen to be 0.44 per cent from column one.

The experiment was repeated and the same results were obtained again. The sample was found to give concordant results.

The products that are extracted with the aid of acetone and thus freed of all content of resinous matters are materials that possess considerable interest when examined from the physical standpoint.

A sample of pale Hevea, plantation crepe, after being extracted with the aid of acetone, was mixed with a certain amount of sulphur in the regular manner. This sample of acetone-extracted rubber was then vulcanized along with another sample of rubber from which the resinous matters had not been extracted with the aid of acetone. It was found there was quite a considerable difference between the two samples of vulcanized rubber.

In the first place the vulcanized product obtained from the sample of rubber gum, which had been subjected to extraction with acetone, was both soft and without strength, differing considerably from the vulcanized product obtained with the non-treated rubber gum. It was easy to see that the removal of the resinous materials by extraction with acetone had a very great retarding action on the vulcanization process. In fact the sample of vulcanized rubber, thus obtained, seemed to be considerably under-vulcanized.

Revulcanization of Rubber

This vulcanized product was then subjected to re-vulcanization at a temperature materially higher than the one originally employed. However the result obtained was in no way different from the first and the qualities of the vulcanized product, twice vulcanized, were not changed in any sensible manner.

The hot extraction of the rubber with the aid of acetone appeared to exert a marked influence on the quality of the gum. The experiments were repeated and this time Para and Rambong (ficus elastica) rubbers were employed. These samples of rubber were treated with acetone in the cold. The samples were available in the form of crepes and the sheets of rubber were immersed in a bath of cold acetone. The operation was carried out in closed bottles. They were put away in a cupboard where the sunlight could not reach them. There they remained for an indeanite period of time and occasionally a sample of the acetone extract was withdrawn by means of a pipette and subjected to distillation. The distillate was then added to the bottles containing the rubber samples. The experiment lasted over a period of three and one half months. At that time it was thought that all the resinous matter was originally present in the samples of rubber gum. The rubbers did not seem to have been changed in any noticeable way by the extraction with acetone. They were then dried by means of dry air.

The results of this extraction will be published in the next installment.—The Editor.

TECHNICAL ABSTRACTS

Mechanical **Chemical** **Physical**

Rubberizing Filamentary Material

Textile material is soaked in rubber latex and then dried by passing it over the surface of a series of warmed metal rolls which rotate in the same direction as the movement of the material, but which move at a relatively higher speed, so as to effect a "brushing" or "wiping" action. Some of the latex remains as a thin film on the surface of the earlier rolls and, on account of evaporation during the rotation of the latter, is redeposited later as dry rubber on the textile material. By treating a number of parallel cords or threads simultaneously it is possible in this way to produce a weftless fabric. Instead of soaking in latex the rubber may be applied to the surface of the textile material in the form of concentrated latex or latex "butter" by the operation of "spreading", the subsequent treatment being similar to that after soaking with latex. British Patent No. 210,397.

Vulcanization Accelerator

A vulcanizing accelerator consists of the reaction product that is formed from the reaction of an aldehyde and thiourea. The product may be prepared by adding aldehyde-ammonia to an aqueous solution of thiourea and is believed to have the formula $C_3N_{11}N_3S$. It may also be produced by dissolving crude calcium amide in water, adding an acid such as sulphuric, to precipitate the calcium salt, and adding ammonium sulphide, or ammonia and hydrogen sulphide, without the removal of the calcium salt. To the solution which contains ammonia and thiourea is added acetaldehyde in liquid or gaseous form, and the reaction product is crystallized out. Other aldehydes, such as benzaldehyde, formaldehyde, and furfuraldehyde, may replace acetaldehyde, and acid catalysts may be used as well. British Patent No. 222,103.

Treating India Rubber Latex

In British Patent No. 223,188 there is described a process in which latex is purified by centrifuging at the highest speed that does not cause coagulation, and removing a very thin layer of the concentrated latex from the centrifuge. Dyes and other substances having a negative charge in the hydrosol state may be previously added to the latex. Pure rubber sheet is then obtained by electrophonetic precipitation on an anode comprising an endless band or revolving drum of amalgamated zinc. The sheet is washed by sprays and passed over a drying table before removal from the anode.

In British Patent No. 223,189 there is described a modified arrangement for carrying out this process which consists in precipitating the rubber by electropheresis on a permaeable non-conducting surface or mold surrounding the anode. The evolved gases may thus escape from the anode without interfering with the rubber deposit. The metal or carbon anode may be embedded in gypsum or unglazed earthenware or may be separated from it by the electrolyte. If shaped articles are required, the anode and cathode may be kept in motion to obtain a uniform deposit.

Concentrating Latex

In the application of rubber latex for various industrial purposes a higher concentration of rubber than the usual one third in the natural latex is desirable, and the present invention, British Patent No. 218,544, provides means for concentrating latex up to eight point two per cent without coagulation.

Water is evaporated from the latex by heating it, and passing a hot gas over the surface, which is continuously agitated to prevent the formation of a coagulated film. The temperature of the latex should be gradually reduced as the concentration increases. The latex is contained in a shallow vessel surrounded by a water jacket containing a perforated steam coil. The surface of the latex is stirred by rotating arms which are mounted on a vertical shaft, and hot air for evaporating the latex is supplied by a pipe which terminates just above the surface at the center of the container.

Premature coagulation is prevented by adding a small quantity of ammonia, the quantity being increased as the concentration increases.

Papers to be Read at the A.C.S. Meeting

(Continued from Page 22)

cussion of the causes of variation and the need for more extensive investigation is also presented.

A Note on the Rate of Combination of Sulphur with Rubber in Hard Rubber Goods

W. E. Glancy

Since the time of Carl O. Weber it has been known that the one chemical compound of rubber and sulphur which can be identified is that of the hard rubber compound $C_{10}H_{16}S_2$. In the theories which have been developed for the vulcanization of rubber and the relation of accelerators to this vulcanization very little mention has been made of the hard rubber field which is the one place where it should be possible to obtain data which mean something. This paper is not intended as a discussion of the theory of vulcanization but it is felt that some of the facts disclosed can be studied with advantage from this point of view. It is shown that a large quantity of sulphur can be combined with the rubber without a corresponding increase in tensile strength. It is also shown that certain chemicals which act as accelerators for soft rubber goods also act as accelerators for hard rubber and that in such cases the accelerator actively brings the sulphur to the rubber. There are other cases where the soft rubber accelerator does not seem to work for hard rubber.

Further Developments and Applications of the Oxygen Aging Test

J. M. Bierer and C. C. Davis

The investigation of a wide variety of rubber compounds from different manufacturers indicates more than ever that several years of natural aging can be duplicated in a few hours by increasing the concentration of oxygen. The test has therefore become a great value in determining the influence on the aging of widely different ingredients such as accelerators and antioxidants, and in turn the influence of the cure on stocks compounded with them. Practical difficulties limit the conditions, particularly the pressure and temperature, under which the test may be caried out, but it has been found that 300 lb. per square inch oxygen pressure at 60 deg. is a reliable index of the natural aging of a wide variety of compounds. Only by such standardization can the test be placed on a quantitative basis comprehensible to all, especially in respect to its possible application to specifications.

The Use of Bierer Oxygen Aging Test in Factory Control of Stocks

J. D. Morron

This paper deals with the many applications of this test as used in improving and controlling the quality of factory production. Among the uses described are, the selection of pigments and compounds, the improvement of rubber stocks especially those of a cheaper class, the determination of proper cures and the checking of cures in the factory. Numerous factory conditions and problems which can be helped by the oxygen aging test are given. Comparative data are also given in a number of cases, checking the experience of the authors of the test in various details.

EDITOR'S REVIEW DESK

Books **Trade Catalogs** **Articles**

RUBBER ON THE MARKET AND IN THE FACTORY. Report on Visits Made to Markets and Factories in Europe and America in 1921. By Dr. O. De Vries, Director of the Central Rubberstation, Bruitenzorg, Java.

Conclusions drawn from contact with the rubber industry in Europe and America by its author during 1921 form the content of this report. Originally printed in Dutch, it has now been translated for distribution in English speaking countries.

Most detailed is the analysis that Dr. De Vries gives. Sampling he treats in a separate section. The ideal method for this, he finds, is the packing of goods so that the contents can be emptied from the case and the buyer see the entire lot, or draw a sample at random.

The difference between the American market and the European and Oriental market is very striking. Whereas in Europe, mainly in England and Holland, one has to a great extent to do with importers-producers, the names of firms, rubber companies and estates being known and the rubber judged with a certain knowledge of matters or rather of origin, the average American manufacturer does not come into contact with producers but only with dealers. Most Americans know little about the tropics. It is therefore observed that the nearer a market is situated to the consumer and the greater the sale, the less severe the demands for standard and the fewer the complaints and objections that are made.

In packing rubber, veneer cases are preferred by a number of manufacturers as being stronger and yielding fewer splinters; others, however, have an equally decided preference for board cases.

In five large American factories, three were found to have no regular testing for raw rubber, one tested regularly, but only the average samples of certain lots all together, the fifth tested each lot regularly and fully. Between the two extremes are the large and medium-sized factories, very many of which regularly examine the raw rubber. Of twenty-five factories visited testing was observed in eleven. Testing is carried the furtherest in certain European factories where the names of estates, importers, etc. are known.

The report also has chapters on Treatment of the Rubber in the Factories, Inner Properties Desired in Plantation Rubber, Various Grades and Special Methods of Preparation.

* * *

THE EDGE MOOR WATER TUBE BOILER. General Catalog No. 63. 6″ x 9″. 153 pp. Bound in cloth. Printed on heavy coated paper. Edge Moor Iron Co., Edge Moor, Del.

The compilers of this splendid catalog preface the descriptive portions of the book by a sketch of the development of the boiler. Constructed first in 1705, the invention of Newcomen and Cawley, it has gradually evoluted into the steam boiler which today is such a valuable adjunct to industry.

The steps incident to the manufacture of the Edge Moor product are carefully told and accompanied by engravings to illustrate the efficiency of the article. There are chapters on Materials and Workmanship, the Handhole Plate, Miscellaneous Details, Baffling and Stokers, Firing with Oil, etc.

Pictures of the Company's plants are given and a map showing the world's oil fields is made a part of the catalog.

* * * *

MODERN MATERIALS USED IN RUBBER COMPOUNDING. By Dr. A. A. Somerville, of the R. T. Vanderbilt Co. *The India-Rubber Journal,* March 7th.

Before the London and District Section of the Institution of the Rubber Industry recently Dr. Somerville speaking on "Modern Materials used in Rubber Compounding," gave four rules, constituting what he considers the duties of the rubber compounders: Improving the quality of standard articles, developing new articles, improving the appearence of old and new goods and decreasing compound costs. Each of these divisions of activity involves the use of specially prepared clay and carbon black, encourages the increased use of mineral rubber versus reclaim and demands the use of bright organic colors in comparison with antimony sulphides.

For many purposes zinc oxide and litharge are not as productive of good stocks as reasonable amounts of clay and gas carbon black, with small amounts of zinc oxide and litharge. And certainly the latter is at lower cost.

The cheapest of all these relatively modern light gravity materials is clay and in the manufacture of tire treads and beads, footwear, heels, hose and various moulded goods high grade stiffening clay is used to good advantage.

Carbon black because of the qualities of stiffness and resistance to abrasion it imparts to properly-cured stock, as well as its cheapness, is a most important material to the rubber compounder.

Mineral rubber, one of the lowest gravity and cheapest good materials tends to make crude rubber more easily handled

(*Continued on Page* 34)

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THE MARKET PLACE Section Continued on Second Page Following.

MARKETS

Cottons and Fabrics

NEW YORK, April 1, 1925

The chief feature of the market two weeks ago was the continued growth of reactionary sentiment in the face of the increasingly bullish character of statistical developments and of encouraging advices regarding the dry goods situation. Liquidation of considerable volume seems to have been inspired largely by a consideration of possibilities rather than of facts. In various parts of Texas light rains alleviated the drouth. The spot demand was less active but a falling off in the middle of the month is not unusual and was not taken as indicating that March commitments had been provided for.

Sales in ten principal spot markets three weeks ago—70,273 bales—were 24,000 bales less than the previous week but compared favorably with those of the corresponding period last year when the total was only 28,179 bales.

The action of the market a week ago afforded ample evidence of the increasing diversity of individual opinions. Taking into consideration the strength of the statistical position and the fact that, with the exception of a comparatively small area in the extreme southwest of Texas, the drouth in that State was still unrelieved, optimistic views concerning the future course of prices appear to be fully warranted.

Not least among the factors contributing to the recent advance above the 26 cent level have been the steady expansion in both the manufacturing and distributing centers of the domestic cotton textile trade, the strong spot demand from spinners and the threat of heavy weevil damage to the new crop as a result of the limited period during which severe weather conditions existed last winter. The extension of mill operations is impressive. Based on a daily activity of 8.78 hours, domestic spindles were operated during February at 100 per cent of capacity on a single shift basis, a percentage which compares with 96.4 for January, 90.4 for December, 87.5 for November, 85.4 for October, 76.1 for September and 62.8 for August. These figures would present a very bullish argument were it not for the fact that, taking into consideration the present price of raw material, the great majority of manufacturers are apparently unable to obtain a satisfactory margin of profit and, owing to the recent falling off in demand, find themselves face to face with the alternative of accumulating stocks or of curtailing production.

New York Cotton Prices

	Open	High	Low	Last Sale	Close March 16
May	24.62	24.63	4.42	24.60	25.36
July	24.93	24.93	24.70	24.84	25.56
October	24.25	24.32	4.16	24.30	25.12
December	24.27	24.36	24.17	24.35	25.12

TIRE FABRICS

There has been some inquiry during the last two weeks for third quarter tire fabric deliveries, with business placed in most instances for full requirements. Tire companies are reported to have nearly reached their maximum production. Three of the leading producers are now turning out 100,000 tires a day. The tire fabric market has reacted with better business than has been apparent in some time. Features of the past two weeks have been orders for filling in requirements for the April-June period. Balloon tires have made demands upon the longer staple cottons with the result that Egyptians and fine American grades have risen in price to a considerable extent. Southern mills are working full time on orders already placed.

CORD FABRICS			
Combed Sakellarides	Nominal		
Combed Peeler lb.	Nominal		
Carded Peeler	.51	@	.53
Combed Egyptian uppers lb.	.70	@	.76
Carded Egyptian uppers lb.	.64	@	.67
SQUARE WOVEN			
17¼-ounce Egyptian uppers, combed lb.	Nominal		
17¼-ounce Egyptian uppers, carded lb.	.62	@	.65
17¼-ounce Sakellarides, combed lb.	Nominal		
17¼-ounce Peeler, carded lb.	.49	@	.51

Ducks—Contracts were placed during the past fortnight for deliveries over a sixty-day period. The committing differed from that of a few months ago when orders had four months to run in many instances. The price basis has held firm and selling prices have been on the basis of book quotations rather than of a trading character. Numbered duck held the best trade position for some time, with 35 and 5 quoted.

Burlaps—Two weeks ago the burlap market was quiet and weak. Trading continued on a limited margin for some days. With sterling firmer each day there was no reciprocal strength in the burlap market. There was little or no buying for a number of days with the general attitude on the part of sellers to hold to previous prices in the absence of buying interest.

SHEETINGS				
40-inch 2.50-yard yd.	.16½	@	—	
40-inch 2.85-yard yd.	.14¼	@	—	
40-inch 3.15-yard yd.	.14¼	@	—	
40-inch 3.60-yard yd.	.12	@	—	
40-inch 3.75-yard yd.	.11	@	—	
40-inch 4.25-yard yd.	.09⅞	@	.10	
DUCKS				
Belting lb.	.44½	@	.46	
Hose lb.	.44½	@	.46	
Enameling lb.	.44	@	.51	
Shoe Ducks lb.	.38	@	—	
Single filling lb.	.19	@	.22	
Double filling lb.	.22½	@	.24	
BURLAPS (Carload Lots)				
7½-ounce 40-inch	7.65	@	7.70	
8 -ounce 40-inch	7.75	@	7.80	
10 -ounce 40-inch	9.45	@	9.50	
10½-ounce 40-inch	9.50	@	9.55	

J. H. LANE & CO.

Tire Fabrics Cord Fabrics

Enameling Duck Drill Sheeting

Osnaburg and Special Constructions

250 W. 57 STREET, NEW YORK 226 WEST ADAMS ST., CHICAGO

ALL THE LEADERS

Are represented in this section. Purchasing agents can rely on the concerns listed as thoroughly reliable in every way.

The Market Place

CRUDE RUBBER — All Grades. Washed - Dried - Milled.
Send us Your Inquiries.
Gibraltar Rubber Corp.
West New York, N. J.

FABRICS—Tire fabrics of every description, Sea Island, Egyptians, Peelers.
Taylor, Armitage & Eagles, Inc.
120 Broadway New York

HEEL BURRS—with central holes; flat and cupped.
J. H. Sessions & Son
279 Riverside Ave. Bristol, Conn.

DO YOU KNOW how cheaply space in this section may be obtained?
Write for Rates

FABRICS—Stockinets, Jersey Cloth and Special Fabrics for the Rubber Industry.
U. S. Knitting Co., Inc,
Pawtucket, R. I.

MANY BIG advertisers started with little space. Spaces in this section are small in size but big in returns. Try one!

DRY KILN—for drying crude rubber and chemicals—Hunter Process.
Carrier Engineering Corporation
750 Frelinghuysen Ave. Newark, N. J.

FACTICE—Prevents blooming, makes colors fast and a smoother batch.
Stamford Rubber Supply Co.
Stamford, Conn.

LINERS — PROCESSED
For
Various Rubber Stocks
The Cleveland Liner & Mfg. Co.
5508 Maurice Ave., Cleveland, O.

FABRIC BROKER—Spots and Contracts: Tire fabrics, Enameling ducks, Tube Wrapping Tapes.
H. Frank Jones
395 Broadway New York City

GUAYULE—"Duro" Brand washed and dried ready for compounding.
Continental Rubber Co.
120 Broadway New York

MOLDS AND CORES—Tire building equipment; general machine work.
The Akron Equipment Co.
Akron, Ohio

FABRICS—Tire fabrics, Egyptian—Peeler, Karded and Combed, Cord and Square.
Cabarrus Cotton Mills
(Cannon Mills, Inc.)
55 Worth St. New York
327 S. La Salle St. Chicago

HARD RUBBER, quality hard rubber goods of every description.
Vulcanized Rubber Co.
251 Fourth Ave. New York City

MOLDS & CORES—Tire building machines; tire finishing stands; tubing machines; hydraulic presses.
The Akron Standard Mold Co.
Akron, Ohio

FABRICS—Tire fabrics—coarse builders, chafers, breakers in all grades.
New England Southern Mills
LAWRENCE & CO.
24 Thomas St. New York
Boston, Philadelphia, Chicago, St. Louis, San Francisco

YOUR NAME
in this space would be seen by Buyers, Chemists, Engineers and Executives in all rubber plants.
Write for full information

MOLDS & CORES—for automobile tires; general machine work.
Kuhlke Machine Co.
Akron, Ohio

FABRICS—Tire, cords, enameling ducks, drills, sheetings, osnaburgs.
J. H. Lane & Co.
250 West 57th St. New York City

RECLAIMED RUBBER—Uniformity, reliability, cleanliness.
Pequanoc Rubber Co.
Butler, N. J.

THE MARKET PLACE Section Continued on Second Page Following.

Reclaimed Rubber

NEW YORK, April 2, 1925

The reclaimed rubber market is quite active, although there are few commitments and buying is only for immediate needs. Prices remain the same and there is a slight tendency to buy about sixty days ahead, but this is only occasional. Stocks are very large and reclaimers are fairly busy, running 75 to 85 per cent. Shoe reclaimers are very dull. Wire stocks show only moderate demand and general mechanicals and tires are fairly active.

Prices show no change.

Friction (Uncured)				
No. 1	lb.	.29	@	.30
No. 2	lb.	.22	@	.23
High Tensile Black				
Super-Reclaim No. 1	lb.	.17	@	.17¼
" " No. 2	lb.	.12¼	@	.12½
Shoe				
Unwashed	lb.	.09	@	.09¼
Washed	lb.	.12¼	@	.12½
Tube				
No. 1 (Floating)	lb.	.14¾	@	.15
No. 2 (Compounded)	lb.	.10	@	.10½
Tires				
Black, unwashed	lb.	.08½	@	.08¾
Black, washed	lb.	.10	@	.10¼
Dark Gray	lb.	.09½	@	.09¾
Light Gray	lb.	.11	@	.11¼
White	lb.	.14¼	@	.14¾
Truck	lb.	.08½	@	.08¾
Miscellaneous				
Mechanical Blends	lb.	.05	@	.06
Red, High Grade	lb.	.13½	@	.13¾

Scrap Rubber

NEW YORK, April 1, 1925

The scrap rubber market has been dull for several weeks, but during the past week there has been an improvement, due possibly to the rise in crude rubber prices. The general feeling in the market is an optimistic one and a further improvement is looked for.

Auto tire peelings		.01	@	.01¼
Standard White auto	ton	18.00	@	20.00
Mixed auto	ton	14.00	@	15.00
Bicycle tires	tons	8.00	@	10.00
Clean solid truck tires		26.00	@	27.00
Boots and shoes		.01½	@	.01⅝
Arctics, untrimmed		.00¾	@	.00⅞
Arctics, trimmed		.01⅝	@	.01¼
Inner tubes, No. 1		.05	@	.05¼
Inner tubes, compounded		.03	@	.03⅛
Inner tubes, red		.02¼	@	.02⅜
Battery jars, clean hard rubber		.01	@	.01¼
Air Brake Hose	ton	13.00	@	—
Rubber hose	ton	10.00	@	—

Crude Rubber

NEW YORK, April 1, 1925

The fact that there is not much nearby rubber available in the market sent the market up during the past two weeks. The character of the demand would not have accounted for the increase. Actual business done was very light. Buyers are probably slowly adjusting themselves to higher prices but it is natural that this should be a slow process. Manufacturers did not bid on any large parcels but they took on small lots of nearby rubber consistently. Apparently this rubber is needed because regardless of prices there are buyers of small lots every day.

There was a marked reluctance on the part of sellers to dispose of rubber even at the highest prices. Scarcity of spot and nearby positions both here and in London drove sellers to cover. On the other hand buyers appeared afraid of the market and unwilling to buy in large lots at high prices.

On the 31st London broke sharply on lack of support and the result was an unsettled and unsatisfactory condition on spot with prices down more than a cent from levels quoted the day before. The market in New York softened sharply as soon as word of the London drop reached here. There was a slight recovery, which was followed by a flood of selling and the gradual retreat of buyers. The May position broke sharply to 42 cents shortly after the opening. Around noon there were buyers at 42½ and by one o'clock there were plenty of sellers but no buyers. Throughout the day small business was in evidence and odd lot trades were reported as much as ½ cent below and above the regular quotations. Both buyers and sellers were reluctant to take any position on a good quantity, although both showed interest in small lots.

Dutch Firm Reports Sales

Important advance sales of rubber of a total weight of 23,200,000 lb. are reported by the Rubber Cultuur Mattschappij "Amsterdam." Out of the harvest of 1925, 1,200,000 lb. are sold, as well as 5,500,000 lb. out of each of the 1926, 1927, 1928, and 1929 harvests.

This transaction is extremely favorable to the company, as the total costs of production amount to 8d. (16 cents) per pound.

NEW YORK MARKET

Plantations—			
Ribbed Smoked Sheets			
Spot	.41	@	.41¼
May	.41⅛	@	.41⅜
June	.40⅞	@	.41⅛
July-Sept.	.40	@	.40¼
Oct.-Dec.	.39⅝	@	.39⅞
First Latex, crepe, spot	.41⅝	@	.41⅞
Amber Crepe, No. 1, spot	.41	@	—
" " No. 2,	.41	@	—
" " No. 3,	.40¾	@	—
Brown Crepe, Rolled	.40	@	—
" " Clean, thin	.41	@	—
" " Specky	.40½	@	—
Scrap, Colombo No. 1	Nominal		
Pontianac—			
Bangermassin	Nominal		
Palembang	Nominal		
Prime Pressed	Nominal		
Sarawak	Nominal		
Paras—			
Up-river Fine	.36	@	—
" Medium	.33½	@	—
" Coarse	.29⅝	@	—
Islands, fine	.33	@	—
Madeira Fine	.37	@	—
Acre Bolivian, fine	.37	@	—
Cut Beni Bolivian, fine	Nominal		
Tapajos, fine	.34	@	—
Caucho Ball—			
Upper, shipment	.31	@	—
Centrals—			
Central, scrap, prime	.30	@	—
Corinto, scrap	.29	@	—
Esmeraldo, sausage	.29	@	—
Guayule, w and d	.33	@	—
Africans—			
Benguela, No. 2	Nominal		
Congo, upper, black	Nominal		
" " red	Nominal		
Kassai, Prime Red	Nominal		
Balata—			
Block, Columbia	.55	@	—
" Cuidad	.65	@	—
Surinam, sheet	.85	@	—
Gutta Percha—			
Siak	.17	@	.18
Red Macassar	3.00	@	3.20
Chicle—			
Mexican, Yucatan	.65	@	—

LONDON MARKET

Standard Ribbed Smoked Sheets—	
Spot	20 d
May-June	20¼
July-September	19⅝
Oct.-December	18⅝

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—	
Spot	20⅛ d
April	20¼
Apr.-June	19⅝
July-December	18¾

TIRE FABRICS

OF EVERY DESCRIPTION

TAYLOR, ARMITAGE & EAGLES Inc.

Equitable Building, 120 Broadway, New York

SEA ISLANDS EGYPTIANS PEELERS

FABRICS TO SPECIFICATION

AMERICAN COTTON FABRIC CORPORATION

The Market Place

RECLAIMED RUBBER—for all purposes.

Rubber Regenerating Co.

Naugatuck, Conn.

SANITARY GOODS — Dress Shields, Reducing Garments, Sheetings, Aprons, Bathing Caps, etc.

I. B. Kleinert Rubber Co.

485 Fifth Ave., N. Y. City

THERMOMETERS—Recording, controlling temperature and pressure controllers.

American Schaeffer & Budenberg Corp.

Berry & South Fifth Sts., Brooklyn

RECLAIMED RUBBER

A standardized grade for every requirement.

U. S. Rubber Reclaiming Co., Inc.

100 E. 42nd St., New York, N. Y.

"42 Years Serving the Industry Solely as Reclaimers"

SOLVENT RECOVERY EQUIPMENT

50 to 90 Per Cent Recovery

Spadone Machine Co., Inc.

15 Park Row New York

Exclusive Selling Agents for

BENZINE CONDENSATION CO.

TIRE BUILDING EQUIPMENT

MOLDS & CORES

The Akron Rubber Mold & Machine Co.

Akron, Ohio

RED OXIDE—A special grinding, guaranteed uniform in color and quality.

Joseph A. McNulty

114 Liberty St. New York City

SOLVENTS — Accurately refined for the rubber industry.

Hartol Products Corporation

192 Market St. Newark, N. J.

VALVES— Tire valves, caps, insides, pressure gauges.

A. Schrader's Son, Inc.

Brooklyn, N. Y.

RUBBER—Crude and scrap, all grades.

H. Muehlstein & Co.

Liggett Bldg. New York

Akron, Chicago, Boston, Hoboken

STRIP CUTTING MACHINES

For cutting all rubber, composition and plain or impregnated fabrics.

Cameron Machine Co.

61 Poplar St., Brooklyn, N. Y.

WHITING & PARIS WHITE

manufactured from *Genuine English Chalk* and *Cliffstone*—no adulterations.

Southwark Mfg. Co.

Camden New Jersey

RUBBER SUBSTITUTES

White, brown and black.

Carter Bell Mfg. Co.

150 Nassau St. New York

SULPHUR—*"Tire"* Brand Superfine; *"Tube"* Brand Velvet; quality Sulphur for the rubber trade.

Stauffer Chemical Co.,

of Texas.

Scanlon Bldg. Houston, Texas

San Francisco, Cal. Chauncey, N. Y.

ZINC OXIDES— A Z O, the Super Zinc.

American Zinc Sales Co.

P. O. Box 1428 Columbus, O.

Pierce Bldg. St. Louis

Prudence Bldg. New York

RUBBER TESTING APPARATUS

Bierer-Davis Rubber Aging Apparatus; Rubber Buffing Machine for preparing tensile strength samples.

Emerson Apparatus Co.

171 Tremont St., Melrose Highlands, Mass.

TAR—PINE, RETORT, KILN

All grades for the rubber manufacturer.

Pensacola Tar and Turpentine Co.

Gull Point, Florida

ZINC OXIDES — Including KADOX and "Albalith."

The New Jersey Zinc Sales Company

New York Pittsburgh Chicago

Cleveland San Francisco

RUBBER FACTORIES

use vast quantities of raw materials and equipment. Let the industry know how well you can serve it through a listing in this section.

TECHNOLOGIST — Testing, formulae, costs, litigation, experimental work on all classes of rubber products.

Fred'k. J. Maywald, F.C.S.

5 William St., Belleville, N. J.

FOLLOW-UP

Your mail efforts by a listing in this section. It will repay you the slight cost.

CHEMICALS & COMPOUNDING INGREDIENTS

Accelerators — Colors — M.R. — Compounding Ingredients
Softeners — Vulcanizing Ingredients — Rubber Substitutes

NEW YORK, April 1, 1925—Prices for chemicals and compounding ingredients show little change but demands from rubber manufacturers continue in good volume. March was a very satisfactory month and practically all dealers and manufacturers of compounding ingredients expect present conditions to continue. The recent ruling in the natural gas fields curtailing carbon black production by 35 per cent will mean a steadier market with firmer prices for this material, thus allowing some of the accumulated stocks to be used up. Prices follow:

ACCELERATORS

Organic			
Aldehyde ammonia, crystals	lb.	$ .93 @	.95
Aniline oil, drums	lb.	.17 @	.17½
Di-Ortho-Tolylguanidine	lb.	1.26 @	—
Diphenylguanidine	lb.	1.05 @	1.15
Excelerex	lb.	.40 @	.45
Formaldehyde-Aniline	lb.	.40 @	.45
Hexamethylene-tetramine	lb.	.85 @	—
Paraphenylenediamine	lb.	1.30 @	1.40
Piperidine-Piperidyldithio-Carbamate	lb.	5.00 @	—
Super-Sulphur No. 1	lb.	.50 @	—
Super-Sulphur No. 2	lb.	.18 @	.30
Tensilac, No. 39	lb.	.80 @	—
No. 40	lb.	.75 @	—
Tetramethyl—Thiuramdisulphide	lb.	4.50 @	6.00
Thiocarbanilide, kegs	lb.	.26 @	.30
Triphenylguanidine	lb.	.75 @	—
Vulcone	lb.	.89 @	—
Inorganic			
Lead, sublimed blue	lb.	.10 @	.11
Lead, white	lb.	.11¼ @	—
Litharge, domestic	lb.	.12½ @	—
Lime, superfine	lb.	.01½ @	.02
Magnesia, calcined, light	lb.	.24 @	.25
extra light	lb.	.40 @	.45
heavy	lb.	.04½ @	.06

COLORS

Blacks			
Arrow "Aerflote1"	lb.	.06½ @	.10
Bone Black	lb.	.05½ @	.09
Carbon "	lb.	.06½ @	.11
Drop "	lb.	.06 @	.14
Ivory "	lb.	.12 @	.45
Lamp "	lb.	.12 @	.40
Micronex	lb.	.07 @	.12
Thermatomic carbon	lb.	.04 @	.08
Blues			
Cobalt	lb.	.21 @	.26
Prussian	lb.	.40 @	.45
Ultramarine	lb.	.08 @	.35
Browns			
Iron oxide	lb.	.02¼ @	.06¼
Sienna, Italian	lb.	.04 @	.14
Umber, Turkey	lb.	.04 @	.05
Vandyke, domestic	lb.	.03 @	.03½
Greens			
Chrome, light	lb.	.29 @	.31
medium	lb.	.30 @	.32
dark	lb.	.31 @	.34
Commercial	lb.	.10 @	.10½
Reds			
Antimony crimson, 15/17 F.S.	lb.	.45 @	.50
sulphur free	lb.	.45 @	.60
golden, 15/17 F.S.	lb.	.16 @	.19
calcium and sulphur free	lb.	.40 @	—
red sulph. 15-17F.S.	lb.	.16 @	.20
Indian English	lb.	.11 @	.15
Oximony	lb.	.13½ @	—
Para toner	lb.	.90 @	1.00
commercial	lb.	.14 @	.15
Red oxide, reduced	lb.	.04 @	.12
pure	lb.	.12 @	.14
Toluidine toner	lb.	1.80 @	2.05
Venetian red	lb.	.01½ @	.05
Vermillion, quicksilver, English	lb.	1.45 @	1.50
domestic	lb.	.15 @	.25
Whites			
Albalith	lb.	.06¾ @	.06⅝
Aluminum bronze		.60 @	1.25
Lithopone, Akcolith	lb.	.06¼ @	.06¾
Lithopone Azolith	lb.	.06½ @	.06⅝
Zinc Oxide—American Process XX red	lb.	.07¾ @	.08¼
Kadox, black label, bags, cars		.10⅝ @	.11¼
blue " " "		.09⅝ @	.10⅛
red " " "		.08⅝ @	.09⅛
American Azo: ZZZ (lead free)	lb.	.07¾ @	.08¼
ZZ (under 5% leaded)	lb.	.07 @	.07½
Z (8-10% leaded)	lb.	.06¾ @	.07¼
Zinc Oxide—French Process White seal	lb.	.12 @	—
Green seal	lb.	.10¾ @	—
Red seal	lb.	.09¾ @	—
Yellows			
Chrome, light		.18½ @	.20
dark and medium	lb.	.18½ @	.20
Cadmium Sulphide	lb.	2.00 @	2.50
Ocher, French medium	lb.	.03 @	.03½
domestic	lb.	.01½ @	.02½

COMPOUNDING INGREDIENTS

Aluminum Flake	ton	21.85 @	24.50
hydrate light	lb.	.17 @	.18
Ammonia carbonate	lb.	.13½ @	.14½
Asbestine	ton	18.00 @	20.00
Barium carbonate	ton	54.00 @	56.00
Barium Dust	lb.	.05 @	.06
Barytes southern off-color,	ton	15.00 @	18.00
Western prime white	ton	22.00 @	23.00
imported	ton	28.00 @	38.00
Basofor	lb.	.04½ @	—
Blanc fixe, dry f.o.b. works	lb.	.04 @	.04¼
Carrara filler	lb.	.01¾ @	.02
Chalk, precipitated, extra light	lb.	.04¼ @	.05
heavy	lb.	.03¼ @	.04
Clay, China, domestic	ton	15.00 @	25.00
Dixie	ton	20.00 @	35.00
Blue Ridge	ton	9.00 @	—
Langford	ton	12.00 @	22.00
Glues, extra white	lb.	.21 @	.29
medium white	lb.	.19 @	.25
cabinet	lb.	.16 @	.25
cabinet low grade	lb.	.15 @	.18
common bone	lb.	.11 @	.14
Graphite flake, bbls.	lb.	.06½ @	.12
Lump	lb.	.04 @	.07
Infusorial earth, powdered	ton	23.00 @	25.00
bolted	ton	20.00 @	—
Liquid latex	gal.	1.75 @	1.85
Magnesia, carbonate	lb.	.07⅛ @	.07¼
Mica, powdered	ton	65.00 @	80.00
Rotten Stone (powdered)	lb.	.02½ @	.04½
Soapstone, powdered	ton	15.00 @	22.00
Starch, powdered	cwt.	4.07 @	4.55
Talc, domestic	ton	12.00 @	15.00
French	ton	18.00 @	22.00
French, high grade	ton	38.00 @	45.00
Italian	ton	45.00 @	55.00
Terra Alba	cwt.	1.25 @	2.00
Tripoli, white	lb.	.02 @	.02¼
Whiting, commercial	cwt.	1.00 @	1.15
gilder's bolted	cwt.	1.25 @	1.35
English cliffstone	cwt.	1.50 @	—
Paris white American	cwt.	1.25 @	1.50
Quaker	ton	13.00 @	15.00
Sussex	ton	8.00 @	10.00
Wood pulp XXX	ton	35.00 @	—
" " X	ton	25.00 @	—

MINERAL RUBBER

Genasco (factory)	ton	50.00 @	52.00
Granulated M.R.	ton	35.00 @	45.00
Hydrocarbon, Hard	ton	29.00 @	35.00
Hydrocarbon, Soft	ton	29.00 @	35.00
320/340 M.P. hydrocarbon (c. l. factory)	ton	47.00 @	52.00
300/310 M.P. hydrocarbon (c. l. factory)	ton	42.00 @	47.00
Synpro, granulated, M.R. (factory)	ton	55.00 @	70.00

SOFTENERS

Acids			
Acetic, 28%	cwt.	3.12 @	3.37
Cresylic, 97%	gal.	.62 @	.65
95%		.58 @	.61
Muriatic, 20%	cwt.	.90 @	1.00
Nitric, 36 degrees	cwt.	4.25 @	4.50
Sulphuric, 60 degrees	ton	9.50 @	10.50
66 degrees	ton	14.00 @	15.00
Tartaric, crystals	lb.	.29 @	—
Alkalies			
Caustic soda, 76%	cwt.	3.20 @	3.50
Soda ash, 58% C.L.	cwt.	1.43 @	1.45½
Oils			
Castor, No. 3, bbls.	lb.	.16½ @	—
Chinawood, bbls.	lb.	.13¼ @	—
Corn, crude, bbls.	lb.	.12½ @	—
refined	lb.	.13½ @	—
Cottonseed, crude		.09⅞ @	.10
Glycerine C.P. drums	lb.	.19 @	.19½
Linseed, Raw C.L. bbl.	gal.	1.03 @	1.09
Palm, Niger	lb.	.09 @	—
Lagos	lb.	.09½ @	.09⅝
Peanut, domestic, crude	lb.	.13 @	—
Petrolatum, white		.12½ @	.13
amber		.03⅞ @	.04
dark amber	lb.	.03⅞ @	.03¾
Pine, steam distilled	lb.	.65 @	.66
Rapeseed, refined	gal.	.97 @	—
blown	gal.	1.05 @	—
Rosin, first rectified	gal.	.51 @	.52
second rectified	gal.	.53 @	.54
Soya Bean, crude		.13¼ @	.13½
Tar, commercial	gal.	.30 @	.32
Resins and Pitches			
Parra M.R.	lb.	.06 @	.07
Tar Retort	bbl.	13.50 @	14.00
kiln burned	bbl.	13.50 @	—
Pitch, Burgundy	lb.	.05 @	.06
coal tar	gal.	.05½ @	.06
pine	bbl.	6.00 @	6.50
Rosin, grade K	bbl.	8.80 @	—
Shellac, Superfine, orange	lb.	.66 @	.68
Solvents			
Alcohol, denatured, No. 1 bbls.	gal.	.57½ @	.61
Benzol, 90%	gal.	.23 @	—
pure		.24 @	.28
Carbon bisulphide	lb.	.06 @	.07
tetrachloride	lb.	.06¾ @	.07½
Dimethylaniline	lb.	.33 @	.36
Motor gasoline, steel bbls.	gal.	.20 @	—
Naptha, V. M. & P.	gal.	.17¾ @	—
Toluene	gal.	.26 @	—
Turpentine, spirits	gal.	.90½ @	.92
wood	gal.	.82 @	.85
Waxes			
Bayberry	lb.	.21 @	.22
Beeswax		.55 @	.65
Carnauba, No. 1	lb.	.36 @	.39
Ceresin, white	lb.	.10 @	.11
Montan, crude	lb.	.06 @	.06½
Ozokerite, black	lb.	.24 @	.25
green	lb.	.26 @	.30
Paraffine White, A.M.P.	lb.	.04¾ @	.04⅞
Yellow A.M.P.	lb.	.05 @	.05⅛
Sweet wax	lb.	.12 @	—

SUBSTITUTES

Black		.08 @	.14
White	lb.	.09 @	.16
Brown	lb.	.10 @	.14
Brown factice	lb.	.09 @	.18
White factice	lb.	.09 @	.16

VULCANIZING INGREDIENTS

Black hyposulphite	lb.	.18 @	.20
Sulphur Chloride (drums)	lb.	.03½ @	.06
Sulphur flour Commercial bags	cwt.	1.35 @	1.70
" bbls.	cwt.	1.70 @	—
Superfine, bags	cwt.	2.20 @	2.50
" bbls.	cwt.	2.60 @	2.90
100% pure, refined, bags	cwt.	2.35 @	2.65
bbls.	cwt.	2.60 @	2.90

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EDITOR'S REVIEW DESK

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on mill, calender or tuber and also aids in the prevention of the oxidation of rubber.

For improving the appearence of rubber articles the compounder has found the organic accelerator invaluable. In slight use during 1912, since that time the accelerator industry has grown more rapidly than the rubber industry. Each year has seen greater expansion of this branch. Among the accelerators are the tetrametjyl-thiuram-disulphide, which is also a vulcanizing agent, and metallic salts of dithio-carbamic acid.

* * *

PACKING FOR FOREIGN MARKETS. Issued by the Department of Commerce, Bureau of Foreign and Domestic Relations, Washington. Price $1.25. Superintendent of Documents, Government Printing Office, Washington, D. C.

Carlessness in packing causes millions of dollars of annual loss to industry. Methods that invite theft or that permit of destruction while goods are enroute are condemned by the Transportation Division of the Department of Commerce, whose three years research, conducted in cooperation with shippers, manufacturers and the Forest Products Laboratory has just been published.

Taking the experience of the oldest export houses as a basis for their suggestions, the compilers of this guide have formulated principles which they believe can be used by any shipper of any commodity and can be applied to the domestic as well as the foreign field.

The guide contains rules on container construction and packing, and chapters with specification charts, devoted to commodity groups, such as machinery, agricultural implements, automotive products, chemicals, leather goods and numerous others.

* * *

CORRECT PROTECTION AGAINST FIRE. 6″ x 9″. 24 pp. Foamite-Childs Corporation, Utica, N. Y.

Five hundred million dollars a year is the figure which describes the fire losses of this country. That this great waste in American industry, with its more serious sacrifice of lives, is largely preventable is the opinion of authorities who have studied and investigated the subject.

Vigilance and care are two safeguards toward prevention, but adequate protection should be part of every plant and office the country over.

In their catalog the Foamite-Childs Corporation discuss the subject of fire prevention and the various types of extinguishers applicable to Class A, B and C fires, which classification follows the Underwriters' Laboratories survey. Pictures and descriptions of the Company's products are given and a chart showing the characteristics of fire extinguishers is also included.

* * *

TWO NEW APPLICATIONS OF RUBBER. By B. J. Eaton. Published in the *Malayan Agricultural Journal* for January.

W. Towgood is credited with the discovery of a new use for raw rubber. This consists in its application as stop-butts for rifle shooting. Tests made have proved the efficiency of this material in the construction of stop-butts and its minimizing the danger of bullet splinters. The rubber is placed across the front of the box and the box is divided vertically into two parts by means of a wooden partition, to which a similar sheet of rubber is attached. The space between the two rubber sheets is filled with sawdust. The bullets penetrating the partition of wood and rubber drop in the space in front of a steel plate at the rear. Since the holes made by the bullets in the rubber sheets close up immediately, the sawdust is retained in the front part of the box and the clean bullets can be collected from the empty space in the rear portion of the boxes.

Fibrok, which is described as a fibrous rubber product for footwear, and which was exhibited in the Malayan Pavilion at the British Empire Exhibition, is used for welting, insoling and middling soles of boots and shoes. The difficulty of attaching crepe soles easily to the leather insole or welt of footwear is well known. This usually necessitates the stitching of a thin layer of smooth crepe to the insole and then attaching by solution a separate piece of crepe, rough on one surface and smooth on the other.

Fibrok can be stitched securely to the leather insole and a crepe sole can then be attached securely by suitable solutions to the Fibrok, which forms the middle sole of the shoe. The product can be used instead of leather to form the insole of footwear.

* * *

THE WORKING OF THE STEVENSON SCHEME. Organized Part-Time Tapping. By Eric Macfadyen, Vice Chairman of the Rubber Plantations Investment Trust. In the *Manchester Guardian Comercial* (British Malaya), February 19th.

The plan regulating the exports of rubber in Ceylon, Malaya, the Dutch Indies, India and Borneo, which came into being under Lord Stevenson's chairmanship and has since been known as the Stevenson Scheme, is defended and explained by the author. Tracing the difficulties of adjusting supply to demand in the case of the produce of trees which must be planted five years before they can yield, Mr. Macfadyen concludes that no other course but government regulation was feasible. The voluntary agreements entered into by the London Rubber Grower's Association to reduce the output of their estates, although adhered to by the members of the Association, did not accomplish results because of the producers, both native and European, who were not parties to his plan.

It is pointed out that the Stevenson Scheme has reduced stocks as low as is comfortable and has raised the price of the product, for the producer, to a profitable level.

* * *

REDUCING LOSSES FROM OBSOLETE MATERIAL. Management Methods Series, No. 1. 11 pp. 3½ x 6″. Issued by Policyholders' Service Bureau, Metropolitan Life Insurance Company.

The problem of handling obsolete material is reduced to a process involving ten rules in this leaflet. Chief among these is the recognition at inventory time of the fact of obsolescence and a final decision as to the disposition of the article. The retention of a limited number of pieces for repair and replacement contingencies, the nominal valuation of all such parts, the notification of all departments of the disposition of parts found obsolete and the acquainting of the purchasing agent with the situation regarding obsolete material are the main points discussed.

Sample forms for the determination of obsolete material are included in this leaflet.